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Presidential Address

ON

THE VALUE OF EYE SYMPTOMS IN THE DIAGNOSIS OF GENERAL DISEASES.

Delivered before the Harveian Society on Jan. 18th, 1900,

By HENRY E. JULER, F.R.C.S. Eng.,

OPHTHALMIC SURGEON TO ST. MARY'S HOSPITAL AND CONSULTING OPHTHALMIC SURGEON TO THE LONDON LOCK HOSPITAL.

GENTLEMEN,—For upwards of 50 years it has been the custom of this Society for the out-going President to deliver an address at this annual general meeting. The actual rule is that he shall expatiate on the objects and aims of the Society, illustrating its great usefulness as a scientific and practical body by enlarging upon the works begun, continued, and ended during the past year of office. Fashion, however, changes, and I am informed by our able honorary secretaries that this rule is no longer regarded, but that the President is expected to give an address upon some subject chosen by himself and it is hinted, rather than spoken outright, that this address should not be too long nor too short; that it should be medically scientific, and, above all things, interesting. Well, gentlemen, in theory it seems to be quite an easy and pleasant task, but in practice the difficulties become more and more evident as the annual meeting approaches. On my part I promise that it shall not be too long, but on your part I fear that it may not be considered either too short or too interesting.

It has occurred to me to address you upon the value of eye symptoms in the diagnosis of general diseases.

The eye is so intimately connected with the other organs and structures of the body that it must necessarily follow that it would sympathise, not only with its fellow eye, but with many of those structures of whose nature it so intimately partakes.

The optic nerve comes forward and expands into the retina which may almost be regarded as a diminutive brain, having its ganglion cells, nerve fibres, and neuroglia; whilst light-sense, form-sense, and colour-sense are all conveyed to the various nerve-centres of the brain and thence to the various and most remote parts of the body. So sensitive is the eye to all nerve impressions that in deep anæsthesia, as from chloroform, the pupil will dilate by simple pinching of the arm. On the other hand, if a hot iron is made to touch a person's arm he instinctively not only pulls his arm away but he directs his eyes in the direction of the burning instrument. Varied movements of the body are instantly brought about by direct vision.

The iris, ciliary body, and choroid are in intimate connexion with the blood-vessels of the brain, the liver, and other parts of the body. It is easy to understand how sarcoma, glioma, and other malignant growths might be and are conveyed by these channels from the eye to the brain and the liver and other parts of the body. The eye contains a complete lymphatic system consisting of the anterior chamber, the canal of Schlemm, and other lymph spaces within the choroid and outside the eye but within the capsule of Tenon. These communicate most freely, not only with the other eye and the intracranial cavities, but with the lymphatics of the nose and face in the immediate vicinity of the orbit. The extra- and intra-ocular muscles of the eye, with the numerous and important nerves supplying them, constitute one of the most important diagnostic studies in medical science.

I feel, therefore, that no apology will be required from me if I bring before your notice to-night a few remarks illustrative of, in the first place, the great value of eye symptoms as a means of diagnosis in general disease, and, in the second place, of some mistakes which may be made by practitioners even of the first rank in our profession.

Take, for instance, the conjunctiva. This delicate membrane often becomes inflamed, it looks red and swollen, and may give off a discharge. In the majority of cases this is simply a local affection and can be cured in a short time. Such, however, is not always the case, the local trouble may be indicative of other diseases in the system. I well remember being called by a medical man to see a patient about 65 years of age who had a purulent discharge from both eyes, the eyelids were swollen, the conjunctivæ were infiltrated, and the corneæ were cloudy and had lost the epithelium from a great portion of their central areas. Not only were the eyes affected, but the skin was red and irritable, extending from the eyelids upwards over the scalp and downwards over the face and neck to the chest and abdomen. I was much concerned at the severity of the case, especially as I had never seen such extensive dermatitis in any case of ophthalmia before. Before giving an opinion I examined the discharges microscopically and found them to be teeming with colonies of gonococci. I told the practitioner at once that his patient was suffering from gonorrhœal ophthalmia and that he was in the greatest danger of blindness. The source of contagion could not at first be traced as the patient himself was free from urethral gonorrhœa. It turned out, however, that he was accustomed to take a warm bath at night and that one of his sons used the same bath and the same towel as he did. This son had urethral gonorrhœa, and thus the study of an eye case led to the discovery of a similar disease in another patient.

In a second case I was called by a medical man to see his son who had a purulent discharge, swelling, and pain in each eye. The corneæ were both intact. His father, mother, and eldest sister were all in attendance upon this patient, each taking a turn at bathing and cleansing his eyes and so exposing themselves to great danger of inoculation. Microscopic examination proved gonococci and private conversation with the patient revealed urethral gonorrhœa. The patient under proper treatment and skilled nursing made a good recovery and fortunately the near relatives all escaped gonorrhœal ophthalmia.

A third case was the reverse of these. It was that of a man who stated that on the previous night his right eye had become red, swollen, and had a muco-purulent discharge. He said he knew the fearful nature of gonorrhœal ophthalmia, because a friend of his had suffered from it and was now quite blind. He further volunteered the statement that he was the subject of urethral gonorrhœa and gave me other details to account for his mental perturbation. I told him I did not think that it was gonorrhœal ophthalmia because the discharge was shreddy and watery and not liquid pus and that I would examine it on my return home and would send him a report that evening. The joy he showed on being told that the discharge showed no sign of gonorrhœal ophthalmia can scarcely be imagined. His first visit was on Saturday and by Monday the eye was practically cured.

I could quote many other cases of a similar nature, but these will suffice to show the great importance of examining the discharges in all cases of severe ophthalmia either in adults or in new-born children, for if the gonococcus is present there is always great danger, and if absent the patient is sure to get well under ordinary treatment.

Gonorrhœa has been shown of late years to be much more extensive in its ravages upon the general system than was formerly supposed. Urethral gonorrhœa may form metastatic disease of the eye as well as of the joints. In a recent paper by Mr. John Griffith read before the Ophthalmological Society he called attention to the fact that gonorrhœa is a frequent cause of iritis, and that iritis thus caused may occur many years after the urethritis, and is similar in character to that found in articular rheumatism. It usually occurs in males, generally in both eyes and often recurs with relapses of gonorrhœa or alternates with attacks on the joints.

Another general disease affecting the eye which may come first to the ophthalmic surgeon is diphtheria. This is fortunately much more rare than gonorrhœal ophthalmia; indeed, it is the rarity of its occurrence which puts us off our guard.

I well remember the case of a child who was brought to me by Dr. Horace Manders. The child's eyes were both red, the conjunctivæ were swollen, there was copious lacrymation, the corneæ were hazy, and their surface almost fluffy in appearance, but the fluff did not wash off with the tears. I was much interested in the case owing to this cloudiness of the cornea, which was then not white like a diphtheritic exudation. I thought that it was a form of purulent ophthalmia and we both considered

it to be so serious that, by Dr. Manders's request, I took the case under my entire charge and treated it in a nursing home. I visited the child twice daily and once daily administered chloroform so as to examine the eyes thoroughly and applied nitrate of silver to the lids. To my horror, however, it became worse and worse, the corneæ becoming greyish white and false membranes forming on the palpebral conjunctivæ. On the fourth day, whilst the child was crying and spluttering in my face, I noticed patches of membrane on the tongue and fauces and then I realised to what danger I had exposed not only myself but the nurses and even the nursing home in charge of the case. A careful examination of the discharges from the eye in this case with cultivations from the same would have discovered the dumb-bell bacillus and so have saved my reputation. It might also have saved the eyes of the child, which were both lost. This case occurred some years ago before we were alive to the importance of bacteriological examinations and cultures.

Mr. W. H. H. Jessop has recorded two cases of diphtheritic conjunctivitis quickly cured by injections of Klein's antitoxin. In both cases the Klebs-Löffler bacilli were discovered in the membrane and were cultivated.

Another class of diphtheritic cases constantly occurring in ophthalmic practice is illustrated by the following. A man, aged 21 years, came to St. Mary's Hospital in 1896 complaining that he could not see properly. His difficulty in reading was very great. He had suffered from "ulcerated throat" about five weeks before and had stayed in bed two weeks. Two weeks later he tried to resume work but found the difficulty just described. Before the illness he could see fairly well. His medical man had said that the sore-throat was not diphtheritic, but in my opinion this was a typical case of paresis of the ciliary muscle causing failure of accommodation. Had proper examinations and cultivations been made in this case the diagnosis might have been established.

This characteristic paresis often follows diphtheria of all parts of the body as in the conjunctiva, vulva, and wounds, but it is most frequent after pharyngeal attacks. It generally begins about two weeks after the attack has run its course and lasts from four to eight weeks. It is always bilateral and the sphincter pupillæ are seldom affected. It is frequently accompanied by a nasal twang of the voice and difficulty in swallowing, so that on attempting to drink the fluid will pass up the posterior nares and out through the nostrils. The extra-ocular muscles are occasionally affected by diphtheria, with or without the loss of accommodation, and cause further visual trouble by the diplopia thus produced.

Syphilis is so frequently found in the eye that I can only touch upon those cases which are often seen first by the ophthalmic surgeon. In acquired syphilis the eye may be the point of entrance of the infection. This may be brought about by the agency of the finger, the tongue, or the lips. Young infants and children run a risk of inoculation when kissed by infected persons, and indiscriminate kissing is evidently a pernicious habit.

In my recent Harveian lectures I quoted cases of chancre of the eyelids. These involve, with very few exceptions, the palpebral conjunctiva. Usually they are situated at the lid margins, but they may start at the caruncle or at the other canthus. The clinical course of these chancres does not materially differ from those elsewhere. The amount of local reaction varies greatly. The pre-auricular gland is always enlarged, firm, and painless, and it is not tender unless it is manipulated roughly. This absence of tenderness has a diagnostic significance and the diagnosis of primary syphilitic sores in this region constitutes one of the most interesting problems in surgery. It may be mistaken for rodent ulcer, tertiary syphilitic ulcer, epithelioma, and lupus, chalazion, hordeolum, and tuberculous ulcer of the palpebral conjunctiva.

Chancre of the eyelid is, as I have just said, always accompanied by enlargement and induration of the pre-auricular gland and sometimes of the submaxillary gland also. The presence, therefore, of glandular swelling will help to exclude many of the above affections. Thus rodent ulcer, tertiary syphilitic ulcer, lupus, and, in most instances, chalazion and hordeolum, may be excluded, for in all these the pre-auricular gland remains unaffected. In epithelioma it is different, the gland becomes affected as in other regions, yet I have known both eyelids to be removed for suspected rodent ulcer in which the growth proved to be epithelioma without any perceptible enlargement of the pre-auricular gland. The fact is that by the time an epitheliomatous ulcer has caused enlargement of the gland, a primary chancre would have healed spontaneously and the sufferer would be halfway through the secondary stage of syphilis. With suppurating chalazion and suppurating styes the gland may be affected, but in such cases it is much swollen painful, very tender, and the skin over it is red and œdematous. It is, in fact, an acute adenitis and easily distinguished from a chronic enlargement. Now by a process of exclusion only one ulcer is left, the tuberculous ulcer of the conjunctiva, which is sufficiently rare to have been much overlooked in literature. This is the only ulcer that is liable to be mistaken for a chancre. The pre-auricular gland is firm and swollen and the ulcer is circular or oval and saucer-shaped. Be suspicious if there is no induration at the base of the ulcer. A tuberculous ulcer, I have learnt from experience, is never indurated. I could, if time permitted, quote two cases of tuberculous ulcer of the eyelids, one of which terminated fatally in tuberculous meningitis and the other in general tuberculosis.

It is well, therefore, not to commence the constitutional treatment of suspected chancre of the eyelid until the diagnosis is confirmed by the secondary manifestations of syphilis, for the use of mercury, which is so very beneficial in the syphilitic, is liable to act injuriously in the tuberculous cases.

Another large class of cases resulting from acquired syphilis is that of syphilitic iritis. This is probably most common in men, but the cases I refer to now as coming in the first place to the ophthalmic surgeon are mostly those of women of all ages, single, married, and widowed. I have seen them in patients aged from 15 to 65 years and they are mostly apparently unconscious of the presence of any systemic infectious disease. At least they do not appear to know that the syphilitic affection is the cause of the eye trouble. They come complaining of dimness of vision, the iris is dull and infiltrated, the pupil is fixed and irregular, the circumcorneal zone is injected, and there is little or no pain. On looking for collateral signs there is usually a copious skin rash, the hair comes off, the throat is sore with mucous patches, and by ingenious questions on the part of the surgeon a history of chancre on the genitals may often be elicited without giving alarm, offence, or even suspicion to the patient. I could quote scores of such cases and I know of no cases of secondary syphilis which more clearly illustrate the value of mercurial treatment in producing rapid recovery. In dealing with such cases great tact is required on the part of the practitioner to avoid the disturbance of domestic happiness. Our first duty is to cure the patient and, in my opinion, we are not called upon to incriminate other persons who may or may not belong to the domestic circle.

Interstitial keratitis, again, is another phase of eye troubles arising occasionally from acquired syphilis and more often, indeed, in the great majority of cases, from the inherited form of this disease. I do not deny that interstitial keratitis may result from other than syphilitic causes, but I am convinced that the great bulk of cases occurring in this country are due to this cause.

Well, these generally come first to the ophthalmic surgeon. We know them at once by the steamy, deep-seated cloudiness of the cornea which varies, of course, with the stage of the affection and with the severity of the infection. It generally appears in children about the age of puberty, although it may occur earlier or later in life; when coming on later it is usually in the form of a relapse.

The proof of inherited syphilis is not always easily established. It is best to adopt a sort of Sherlock Holmes's method of observation. Direct questioning is often difficult, not to say embarrassing both to the medical man and to the parents of the child. Neither parent would like to admit that the cause of the child's disease had originated in his or her own person. The father will privately admit that he had syphilis many years ago, a considerable time before marriage. The mother will gladly tell about premature labours, children born dead, previous miscarriages, skin rash, sore-throat, and so forth.

The collateral symptoms of inherited syphilis occurring in the patient are frequently to be traced, but they necessarily vary, as I have said, with the dose of the disease which has fallen to the lot of this particular child. The question of the Sherlock Holmes's method of observation has recently been commented upon in medical literature, and I must take this opportunity of commending it most cordially so long as it is used for detection and not for exposure. In this particular affection, for instance,

the medical Sherlock, with the previous assistance and coöperation of the maiden aunt, the mother-in-law, or some other person who knew all the family history, might easily address his patient in the following strain. We will suppose that this child was not the first, but the second, affected by the disease. He might say: "Your eldest sister is deaf; she is very ugly and not nearly so well developed as you are; her eyes were once considerably worse than yours and her sight is still defective, her upper front teeth are notched, the bridge of her nose is sunken, and she has a *café au lait* complexion. Your younger brother is quite well, his sight and hearing are good, he is even better-looking than you are, and he is not deaf. Your mother was not well after her marriage, her hair came off, she had a rash all over her body, and a sore-throat. She had a little boy who was born dead. Your father, well, I could say something about your father, but he is still a big and powerful man, and so perhaps I had better not."

No doubt Dr. Conan Doyle's method is an excellent one, but I am sure he would agree with me that it should be used exclusively for observation and the better treatment of our patients, but never for their exposure.

Another infective disease in which we are often consulted is influenza. Considering the myriad of cases that are said to occur of this disease it is surprising that more eye troubles have not been recorded. Nevertheless, many sequelæ do occur and that apparently in direct proportion to the severity of the previous attack. A few years ago a medical friend of mine sent me quite an urgent message saying, "Dear Juler, my wife has developed a most fearful squint. Do come and operate at once." His wife was a beautiful lady, and he, poor man, was much disconcerted. She had recently sustained a severe influenzal attack in which the temperature had been over 105° F. with some basic pneumonia. The case was only one of paresis of the external rectus muscle causing internal strabismus. My friend had the pleasure of seeing this squint quite disappear in the course of a few weeks without the necessity of the proposed operation.

Quite recently I was called to a case of acute glaucoma occurring in a lady about 50 years of age. There appeared to be no other cause than recent influenza. I performed iridectomy and the operation seems to have been as effective here as in ordinary cases of acute glaucoma. Only one eye was attacked.

We constantly see cases of hyperæmia of the conjunctiva with or without discharge. Paresis of accommodation is frequent though less severe than that following diphtheria although it seems to take longer to recover. Cases of embolism of the arteria centralis retinæ are recorded by Hosch and Coppez. Pronounced optic neuritis and neuro-retinitis single and double have been reported by Cross, Hartridge, Snell, and many others, including myself. The fundus presents varied appearances, in many cases seeming like an ordinary optic neuritis, in others presenting small brilliant white dots between the optic disc and the macula. These dots will sometimes disappear. The defect of vision varies, but in some cases the patient becomes totally blind.

Before going further I should like to dwell a little upon the importance of the ophthalmoscope as a means of diagnosis. The great charm, at least to my mind, of ophthalmic practice is the precise and definite nature of the work. We can in the great majority of cases coming before us give a definite diagnosis, a definite line of treatment, and a definite prognosis. This is undoubtedly due in a large measure to the proper and skilful use of the ophthalmoscope. Unfortunately I fear that many practitioners do not keep up the use of this instrument. All must have some knowledge of its use, for nowadays a student cannot present himself for examination even for the Membership of the Royal College of Surgeons without a certificate of having done ophthalmic work. Still, there is a holding back in the use of this most helpful instrument, although to my mind nothing is so simple and easy. By retinoscopy, or the shadow-test, we can in a few minutes find out not only the quality of an error of refraction but we can estimate its quantity with the greatest accuracy. By the direct method of ophthalmoscopic examination we can scan the retina, the optic nerve, and the choroid. A few drops of homatropine hydro-bromate instilled into the palpebral sac about half an hour before the examination renders this quite a simple matter which can be learned from any modern text-book.

One of the best instances of its use is, I think, in the detection of malingerers. Although the conscription is not in force in the British empire at the present time yet we find many persons who believe or pretend that they cannot see. They generally complain of one eye only. Many of this class of patient belong to the school-girl type, between the ages of 10 and 18 years. We frequently see them both in hospital and in private practice. A girl is brought by her anxious mother, who states that the girl cannot see with one eye. We examine the pupils and find them both equal, active to light, and normal in size. By retinoscopy we find there is no ametropia such as would cause blindness. By the direct ophthalmoscopic examination we find the fundus absolutely normal. The room has been darkened for this examination and the patient cannot very well see what we are manipulating. An empty spectacle frame capable of holding lenses is placed upon the patient's face and she is told to read illuminated test-type in the corner of this dark room, then, both eyes being open, a strong convex lens is placed in front of one of the eyes so as to obscure its vision, and she is told to read again, then the other eye is treated in the same way. She does not know at the time that this glass obscures the vision. This is generally sufficient to confuse the patient to such a degree that she will read all the letters with either eye, not being quite sure with which eye she is actually reading. Having thus proved, to our own satisfaction, that the patient can read with either eye, we resort to Snellen's coloured test-types which are red and green. We also place a red and green glass in front of each eye respectively, and this isolates the eyes so that one eye can only read red and the other only green letters. Now she is told to read and she will at once read both the red and green letters, showing that both eyes are working and that she has been mistaken about her sight.

In these young people there seems to be no definite motive for malingering, and they really seem to think that they cannot see. I never accuse them of untruthfulness, nor do I think it well to tell even the parent that the young lady is untruthful. The parent is greatly distressed and often not a little indignant. It is, I think, better to be silent and to advise the parent to withdraw all apparent sympathy. The condition is no doubt an early phase of hysteria, although very different from actual hysterical amblyopia.

Older women come with the same kind of complaint. In men the motive is often more apparent, but even then they fall into the same trap by the mystifying treatment I have just described and by the time we come to the coloured types they will read the red and green letters indiscriminately. I have recently had several cases where by the use of the ophthalmoscope and the coloured types just mentioned I easily proved to my own satisfaction that I was dealing with a malingerer, and I could mention many instances showing the great value of the ophthalmo cope in forming a correct diagnosis where it would have been difficult to do so without a knowledge of its use. If the instrument is so useful in this trivial subject of malingering how much more valuable must it be in the detection of actual disease.

Take, for instance, renal diseases. Nothing is more common in either hospital or private practice than the discovery of albuminuric retinitis. The patient may be quite unaware of any trouble beyond defective sight and the ophthalmoscope demonstrates the existence of slight optic neuritis, white spots around the macula, and hæmorrhages scattered over the fundus of one or both eyes. The urine is examined and found to contain albumin and casts galore. These albuminuric affections of the retina are occasionally found in all forms of nephritis. They are most frequent in the later stages of contracted kidney, and when found in such cases they indicate not only a loss of vision but also a probable loss of life in the near future.

Lastly, eye symptoms are of the greatest possible value in the diagnosis of diseases of the nervous system, intracranial and otherwise; but, alas, my time has expired and I should require a longer period for the development of this aspect of ophthalmology.

Gentlemen, I hope I have not wearied you, and before I finish this expiring effort of my year of office let me thank you for the honour of having been elected to act as your president for the past year.

NEWTON ABBOT (DEVON) HOSPITAL.—The annual meeting of this institution was held on Jan. 25th. The medical report showed that 184 patients had been admitted. Mrs. Stephens had given £1000 to endow a bed. The income was £2122, and there was a favourable balance of £420.

A Clinical Lecture

ON

SOME COMPLICATIONS FOLLOWING ON INJURIES ABOUT THE ELBOW-JOINT AND THEIR TREATMENT.

Delivered at the Leeds Infirmary on Nov. 14th, 1899,

BY H. LITTLEWOOD, F.R.C.S. ENG.,

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GENTLEMEN,—There is one complication sometimes following on injuries about the elbow-joint which I want more particularly to discuss to-day, the more so as there is practically no mention of it in the ordinary surgical text-books. I am inclined to think that it is not so rare a complication as it is sometimes thought to be, as I have seen it in at least ten cases during the past 12 years. I have, however, discussed the condition with some hospital surgeons of considerable experience, who tell me that they have never seen a case. Here and there in the medical journals cases have been described, their pathology discussed, and various plans of treatment recommended. During the last 12 months two cases have come under my care and it is from a study of these that I shall base my remarks as to the pathology of the condition and advocate the treatment which I carried out.

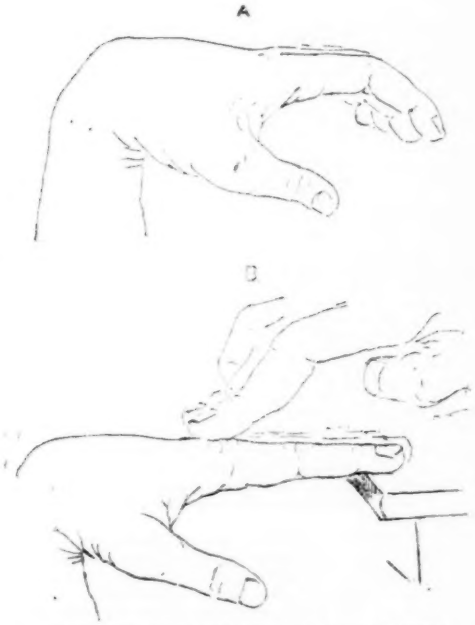
The deformity is this, that when the wrist is extended then the inter-phalangeal joints of the fingers and thumb are strongly flexed, so that the tips of the fingers touch the lower part of the palm, and no reasonable amount of force appears to be capable of straightening them (see Fig. 1, A and B), but

FIG. 1.

A, B, Position assumed with wrist extended.

as soon as the wrist-joint is flexed to a right angle then the inter-phalangeal joints can be easily extended (see Fig. 2, A and B). When first examined the deformity may be thought to be due to some injury of the nerves, probably the musculo-spiral, but this clearly will not account for the deformity, although in some of the cases one or more of the nerves may be involved, as in Case 1 it was thought that there was some ulnar anæsthesia. You are all familiar with the characteristic deformities and anæsthetic areas associated with musculo-spiral, ulnar, and median paralysis, and none of these are like the condition which I refer to. The deformity appears always to occur in children after some severe injury about the elbow-joint, and generally after a fracture separation of the lower humeral epiphysis. I have once seen it after a dislocation of both bones of the forearm backwards. The cause of the deformity is, I believe, primarily in the muscular portions of the flexor muscles of the forearm. If the histories of these cases are carefully gone into it will be found that the injuries have been severe and that

FIG. 2.



A, Position assumed with wrist flexed. B, Amount of forcible extension possible with wrist flexed.

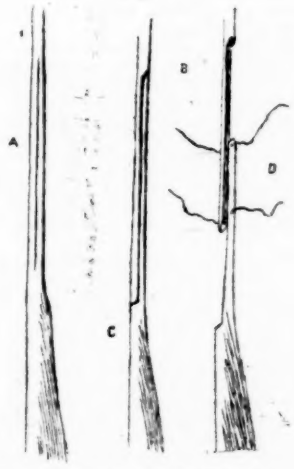
the flexor muscles have been torn, possibly by the displacement of the forearm backwards with the lower end of the humerus. The torn muscle is replaced by fibrous tissue, and this, contracting, is, I believe, responsible for the deformity. A lump varying in size can be felt in the flexor muscles in the upper third of the forearm, and it has been present in all the cases which I have seen. It is a well-recognised condition in the sterno-mastoid muscle. A swelling is found in about the middle of the muscle soon after birth, which is thought to be due to a tearing of its fibres during parturition; this sometimes produces wry-neck.

I do not believe that splint-pressure has anything to do with the production of the deformity, although I am well aware that in most cases a sore—pressure-sore—is present; but this is not always so, for in Case 1 no abrasion of any kind was present and in Case 2 a sore formed but was on the extensor surface of the forearm. I am especially laying stress on this point as it has given rise to one theory—that the contraction is due to a secondary inflammation extending to the muscles from the splint-sore. That explanation clearly will not account for Case 1 in which there was no sore of any kind, and in Case 2 the sore was on the back of the forearm. One would imagine that any inflammation extending from this sore would have involved the extensor muscles and produced a hyper-extension of the wrist instead of involving the flexor muscles. For these reasons I am inclined to think that the pressure-sores are not causally related to the deformity; they may, however, be taken as some index of the amount of laceration of the soft parts at the time of the injury, producing a great amount of effusion which increases in amount after the

application of splints. Probably the effusion of blood into the skin and subcutaneous tissues renders them anæsthetic, acting in the same way as a hypodermic injection of water; and this may explain why a large sore may form and yet the patient will not complain of any pain, and on this account it is very important to examine the limb most carefully at short intervals; there is practically no fear of non-union of the fracture. If a splint-sore forms you will very rightly have to bear the blame, and should, unfortunately, contraction of the flexor muscles follow the friends of the patient will have no doubt that the result is due to tight splints. In some of the cases pronation is limited and in others there is deformity about the lower end of the humerus, the most serious being the presence of a mass of bone at the inner side preventing flexion of the elbow. The removal of this mass generally produces satisfactory results. Can anything be done to prevent this contraction? Of this I am doubtful. If during the treatment, whatever method is adopted, any contraction of the fingers be noticed possibly the flexion-contraction might be avoided by putting the arm in a straight anterior arm-splint reaching to just above the bend of the elbow and posterior rectangular splint extending to the tips of the fingers, so that the fingers could be fixed in the extended position. It would certainly be worth trying. In one very slight case which I saw some time ago frequent massage greatly improved the condition. I unfortunately lost sight of the patient, so I do not know what was the final result. I will now describe to you the plan of treatment which I adopted in my two cases and then read brief notes of them.

The parts having been made aseptic a tourniquet is placed on the arm and the forearm is held in the position of supination. An incision about four inches long is now made in the middle line, beginning at the wrist, and the skin is reflected. The superficial flexor tendons are exposed and divided in the

FIG. 3.



Method of lengthening tendons.

following manner. A scalpel is thrust into the middle of the tendon and it is divided in the longitudinal direction for about one and a half inches (see Fig. 3, A). At the lower part of this incision a transverse division of the tendon is made in an outward direction (see Fig. 3, B), and at the upper part of the longitudinal slit a similar division is made directly inwards (see Fig. 3, C). In this way the tendons are completely divided and the necessary lengthening can be obtained by sliding the split portions and suturing (see Fig. 3, D). The exact amount of lengthening is determined by the ability fully to extend the fingers with the wrist in the extended position. The superficial tendons after division are united with long threads of fine silk, so they can be held apart and can be easily recognised for the final suture. The deep tendons are now divided in the same way, the split portions sliding on each other to obtain the required increase of length, and are at once sutured in two places with fine silk (see Fig. 3, D). All the deep tendons having been divided, lengthened, and sutured, the superficial tendons are then sutured in the same way. No vessels are ligatured. The wound is closed with silkworm gut and a uniform firm wool and gauze dressing is applied from the fingers to the elbows, the fingers and wrist being placed in the extended position and the fingers separated by small pieces of wool, and only the tips of the fingers being exposed. The tourniquet is then removed. The operation takes about one and a half hours. This form of dressing is sometimes painful for the first 24 hours. If there is pain a small dose of opium or morphia should be given.

CASE 1.—The patient, a girl, aged eight years, was admitted to the Leeds Infirmary on Nov. 17th, 1898. Four months before admission she had a fracture separation of the lower end of the humerus, with a good deal of swelling of the parts. It was put up in an internal rectangular splint for four or five weeks. When the splint was taken off it was noticed that the fingers were contracted and afterwards the contraction gradually increased. There was some limitation of movement of the elbow-joint; it could not be completely extended and could be flexed only to about a right angle. Flexion was limited by a bony prominence at the inner side of the lower end of the humerus. When the wrist was extended the inter-phalangeal joints of the fingers and thumb were firmly flexed, the tips of the fingers touching the palm and the flexed thumb resting against the outer side of the flexed forefinger. With the wrist in the extended position it was impossible to get any extension of the fingers. If, however, the wrist-joint were flexed then the fingers could be easily and completely extended. There were no cicatrices on the forearm the skin being perfectly normal. At the upper third of the forearm in the flexor aspect a thickened mass could be felt in the substance of the muscles. It was thought that there was some loss of sensation in the ring finger and the little finger.

The operation already described was performed on Dec. 5th, 1898. All the flexor tendons being lengthened about an inch a firm uniform antiseptic dressing of gauze and wool was applied from the fingers to the elbow, the fingers and wrist being extended. The wound when dressed on Jan. 1st, 1899, had quite healed and the silkworm-gut sutures were removed. The patient left the infirmary on March 30th, 1899. After leaving off the dressings for a few days it was found that there was some tendency to slight contraction of the sutured tendons. To prevent this the limb was well rubbed and massaged and a back-splint was worn for two or three hours every day. The patient's condition greatly improved before leaving the infirmary, so that she could do some knitting. The parents have persevered with the rubbing and she has now a very useful hand.

CASE 2.—A girl, aged six years, was admitted to the Leeds Infirmary on Jan. 7th, 1899. In May, 1898, the patient fell from a ladder and sustained a severe fracture about the left elbow-joint and a fracture of both bones of the forearm. The forearm was greatly swollen and the fractures were with difficulty kept in position. A splint-sore formed about the middle of the back of the forearm; the condition was very similar to that in Case 1. The contraction, however, of the flexor tendons was more marked, so that when the wrist was flexed the fingers could not be completely extended. Eight months had elapsed from the time of the accident. Both fractures had united and the movements of the elbow-joint were good. The lump in the muscular part of the flexors was well marked.

The operation was performed on Jan. 9th, 1899. All the tendons with the exception of the flexor carpi ulnaris were divided, lengthened about an inch, and sutured. Similar dressings to those used in Case 1 were employed. The wound was dressed on Feb. 2nd; it had healed and the stitches were removed. Daily massage was employed. The patient left the infirmary on March 30th, 1899. The fingers were then quite straight and she had some power of flexion. The condition is now greatly improved, and although at the present time the result is not as good as was the result in Case 1 yet I have very little doubt that ultimately the patient will have a very useful hand. In both of these cases the nerves, which were exposed, appeared to be healthy.

In THE LANCET of March 12th, 1898, p. 722, Mr. Raymond Johnson described a case of this kind in which he improved the condition somewhat by removing a portion of the radius and ulna. Unfortunately he did not obtain bony union. Mr. Lawford Knaggs has kindly drawn my attention to a very instructive lecture in the *Guy's Hospital Gazette* for October, 1898, by Mr. Davies-Colley on a similar case which he had had under his care and in which he first divided the muscles

and got some improvement and later divided all the flexor tendons about one and a half inches above the upper border of the hand, the result being that the child's fingers were straight but could not be flexed.

The plan of treatment which I have described appears to me to be rational and from what I can gather from the description of other cases the results which I obtained will compare favourably with those obtained by other methods. I wish to thank my late house surgeon, Mr. Frank Talbot, for his help at the operations, for his care in the after-treatment of the cases, and for the drawings which he has made for me to illustrate this lecture.

DAY-TERRORS (PAVOR DIURNUS) IN CHILDREN.

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THE occurrence of day-terrors in children has received but little attention. Much has been written about night-terrors, for these are extremely common; but it would seem that the similar but much less common attacks which occur in the waking condition during the day have scarcely been noticed by English writers. Henoch[1] in the fourth edition of his lectures alludes to their occurrence by a brief note of two cases, but so far as I can ascertain no others have been recorded with the exception of two cases of somewhat different character described under this name by Dr. L. G. Guthrie. Two cases of pavor diurnus, and a third probably of the same nature, have recently been under my care and, as will be seen, they closely resemble the condition described by Henoch.

CASE 1.—A boy, about six and a half years of age, about four years ago had night terrors which continued to occur, but with decreasing frequency, until seven months ago, when they ceased. Three months ago he awoke one night at 11 P.M., and although he was wide awake he seemed terrified, clutched at his mother, and said that he was afraid of the trains (which run near the house, but of which he had never shown the least fear before). Similar attacks occurred on several nights subsequently about the same time, the child being wide awake on each occasion. Two months ago, after having one of these attacks on the previous night, he began screaming in fright one morning at 8 A.M., but without knowing why, and during that day he had several similar attacks. After this he had many attacks both day and night. They occurred at any time of day. Often the boy would suddenly stop in the middle of his play, look terrified, and rush to his mother screaming. Sometimes he says he hears something which frightens him; sometimes he hears an imaginary person coming up the stairs whom, however, he is unable to describe; and sometimes he cannot explain why he is frightened. During these attacks he always seems to recognise people about him and there are no visual hallucinations. His face does not change colour during the attack. The whole duration of the terror is not more than half a minute. The child is said to be "terribly excitable." He is spare, with bright intelligent face, very quick of apprehension, talks in an eager excited way about his toys and games, and is obviously a child of very "nervous temperament." He is pale, and the mother says he has been getting thinner ever since the attacks began three months ago. As an infant he never had convulsions, and beyond measles and the night-terrors mentioned above he has had no other illness. He complained of headache once three months ago but not since. The family history showed acute rheumatism in the mother and the maternal grandmother, but no fits or neuroses of any kind.

CASE 2.—A boy, aged three years, for the last six weeks has had sudden attacks of screaming with fright, occurring often many times in a day. The attacks occur at any time of the day. Whilst sitting quietly with the rest of the family or busy at his play he will suddenly begin to scream, turn pale, and look "strange about the eyes"; he rushes to his mother and hides his face in her lap saying that he is frightened. Sometimes he says that "somebody is coming after him," but he cannot describe his imaginary pursuer nor is it clear whether the hallucination is visual or auditory. The attacks last from two to three minutes. He has had night-terrors with visual hallucinations for some weeks past and is "a very excitable child." He is easily frightened by trivial things—for example, on crossing a railway bridge a few days ago he saw the smoke of a train and screamed with fright. He easily becomes passionate if thwarted. He has never had convulsions. The child is fairly nourished, quick, and intelligent, perhaps precocious; he is shy, but when this is overcome he talks in the rapid, eager fashion of an excitable child. There is a little puffiness about the lower eyelids suggesting some intestinal catarrh; the bowels are costive; the stools are said to be normal (subsequent observation showed excess of mucus and a large number of thread-worms). Physical examination showed nothing abnormal. As to his family history, his father is under treatment for epilepsy. His paternal grandfather and paternal grandmother, a paternal uncle, and probably also a maternal uncle, had rheumatic fever, another maternal uncle is "weak-minded," and the mother's aunt is in a lunatic asylum. One paternal uncle is said to have had similar "terrors" in early childhood but no definite account could be obtained.

CASE 3.—A girl, aged four and a half years, for the last nine months has had attacks of screaming during the day. No satisfactory details of the attacks could be obtained, the mother's account being confused and contradictory, especially as to whether the child seemed frightened or not. In one at least of these attacks (of which she has had six in the last fortnight) the child was thought to be screaming with fright, but usually no cause whatever could be found for the attacks. Before they begin the child seems "strange" in her manner and then suddenly begins screaming. This has happened while the child was sitting amusing herself at the piano or in the midst of a game. The whole attack sometimes lasts about 15 minutes. No hallucinations or delusions were noticed, but the mother's lack of observation made this quite uncertain. For three months at least the child has had night-terrors, apparently with visual hallucinations, and for a long time has talked much in her sleep. She is extremely excitable and rather precocious. Occasionally she complains of vague abdominal pains. Physical examination showed a musical systolic bruit at the apex of the heart, but there was no history of rheumatism. As regards her family history, the mother is said to have had severe "rheumatism."

To these three cases may be added the two cases recorded by Henoch.

CASE 4.—The patient was a boy, aged seven years, the son of an actor—a nervous, anæmic, delicate child. For some months as many as from 10 to 20 attacks took place daily, but never during the night. The child would shut his eyes and stop his ears, crying, "I'm afraid," and cling to his mother. The duration of the attack was only a few seconds. The child was otherwise healthy and, in particular, was free from other hysterical symptoms.

CASE 5.—A "nervous" child, aged six years, had suffered from pavor nocturnus for seven months, with intervals of about a fortnight, and the attacks with hallucinations occurred occasionally by day. Unfortunately, both these cases were lost sight of.

The cases recorded as instances of day-terrors by Dr. Guthrie[2] in his very interesting article on Night-Terrors differ considerably from those mentioned above. In one case a girl of nine years of age was said to have "gone out of her mind during the night." At the middle of the following day she was still sitting in bed flushed and wide-eyed and was screaming madly of "black dogs" and "men under the bed." She was removed to the hospital and a few hours later she recovered her senses. In the other case a boy, aged eight years, with hectic temperature due to spinal caries and abscess, awoke at 9.30 P.M. screaming, "Robbers! murderers!" and continued in a maniacal condition with various delusions for three whole days. In these two cases the condition is not the transitory paroxysm to which Henoch alluded as "pavor diurnus or day-terrors," but a much more permanent condition, lasting many hours, or even days, with no intermission, and it may be doubted whether it would not be better to

[1] Lectures on Children's Diseases, Translations of the New Sydenham Society, 1889, vol. i., p. 241.

[2] On Night-Terrors, Allbutt's System of Medicine, vol. viii., p. 228.

include such cases under the head of mania rather than under that of day-terrors. The distinction is a fine one and perhaps only a verbal one, for it occasionally happens that night-terrors last fully half an hour with almost maniacal symptoms, and it is quite conceivable that day-terrors may run a similar course; but, even so, a paroxysm which usually lasts a few seconds or minutes and is occasionally prolonged to half an hour falls into a somewhat different category from a continuous state lasting from one to three days, such as Dr. Guthrie describes. The name "day-terrors" seems more appropriate for such cases as Henoch has described—transient paroxysms of terror, closely resembling night-terrors except that they occur in the waking condition.

The relation of these attacks to night-terrors seems to require some definition. It is evident that the relation is very close; in four cases out of the five night-terrors were or had been present, and it would seem that the day attacks may be associated with them or replace them. But the difference between the night and the day attacks is not merely one of time of occurrence, there is the far more important difference that while the characteristic of the night-terror is its onset during sleep, the characteristic of the day-terror is its occurrence in the waking condition. It has happened that a child has fallen asleep in the daytime and then has had an attack exactly similar to night-terrors, but such an attack, although it occurred in the daytime, is not a day-terror. Conversely, there is reason to believe that a "day-terror" may occur at night. In Case 1 the mother, a very intelligent observer, was familiar with the character of night-terrors from the attacks which the boy had experienced some months earlier, and she particularly noticed that the supposed "night-terrors" at the later date differed from the previous ones in that the boy was wide awake when the attacks occurred. I would suggest, therefore, that it would be very much better to distinguish these conditions as "sleep-terrors" and "waking-terrors."

The symptoms of waking-terrors or day-terrors are fairly constant. A nervous, excitable child, in the midst of his play or while sitting quietly in a room with other people, suddenly without any apparent cause begins to scream and looks terrified. Sometimes he says that some imaginary person is coming after him or that he hears something which frightens him or he has some other form of hallucination or delusion. He rushes screaming to his mother or to some other person for protection and no coaxing or attempts to soothe seem to have any effect in pacifying him. In one case when the attacks occurred the child had a strange look about the eyes which the father described as "a vacant look." This child also turned pale, as children very readily do, with fear. There was never any loss of consciousness in any of the cases and in all of them the children recognised those about them. It must be mentioned, however, that Dr. J. F. Goodhart states that in these attacks the child sometimes shows a definite dread of a nurse or of the mother, of whom in times of health the child is even inordinately fond, and he also says he has known a child to be quite maniacal in the attacks. The duration of the attacks varied from a few seconds up to about a quarter of an hour and their frequency varied from one in a fortnight up to 20 in a day. It is important to notice that although the day attacks may be associated with night-terrors they may also occur without any nocturnal symptoms.

The etiology of day-terrors is as difficult to determine as that of night-terrors. One thing seems clear, that the children who suffer from day-terrors are children of excitable nervous temperament. The family history of rheumatism in all the three cases under my care seems to point in the same direction. In seeing a large number of children one is struck with the sensitive, nervous temperament of those who come from rheumatic families. No small number of such children show one or other of the minor functional neuroses; it may be some habit-spasm or nocturnal enuresis, or it may be recurring headaches or "nervous diarrhœa," or it may be simply undue excitability. The family history of rheumatism, therefore, is probably more than a mere accident; and it is interesting to note that in night-terrors Dr. Goodhart[3] found a family history of rheumatism in 19 out of 37 cases, and Dr. Graham Little[4] found valvular murmurs in the heart in 17 out of 30 cases. In Case 2 the neurotic inheritance was even more marked, for, as stated above, the father was epileptic, one uncle was "weak-minded," and the mother's aunt was in a lunatic asylum.

The determination of the exciting cause of these attacks involves some consideration of their nature. As I have already mentioned there is no apparent objective cause; but it must be noticed that some of these children are exceedingly timid even in the intervals between the attacks. In Case 1 the noise of the fall of an umbrella-stand caused quite disproportionate terror, and Case 2 was terrified by the smoke of a train. It might therefore be suggested that, sometimes at least, an objective cause is present, which may be so slight as to be overlooked by the parents, but is magnified by a fanciful child into something terrific. Such a possibility is difficult to exclude, but in the cases recorded above the attacks seemed in almost every instance to be entirely independent of any objective cause.

The question then arises whether these attacks are identical in their nature with night-terrors. The wide difference in the conditions under which they occur—viz., during sleep in the one case and in the active waking condition in the other—makes this a question of considerable interest. Most writers have discussed the nature of night-terrors on the assumption that sleep was a necessary factor in the production of the terror, and the distorted fancies of the sub-conscious condition of sleep, with or without some reflex stimulus, have been supposed to be the terrifying agent. Such a theory evidently must be modified if it is admitted that day-terrors are identical in their nature with night-terrors. It seems difficult to doubt this identity; the repeated association of the two conditions clinically, the fact that day-terrors may replace night-terrors or *vice-versâ*, and the close similarity of the attacks, which in both consist of a sudden transient terror with the presence sometimes of hallucinations or delusions,—all these points make it more than probable that the two conditions are identical in their nature. This being so, it is not sufficient to say of night-terrors that they are simply "children's night-mare, bad and terrifying dreams," for exactly similar attacks occur during the daytime when the child is wide awake and busy at play, and, moreover, as I have pointed out above, it seems at least probable that attacks may occur at night which are really not "sleep-terrors" but "waking-terrors."

Some writers have considered night-terrors as closely allied to, or even identical with, epilepsy, and the occurrence of similar attacks in the waking condition might be thought to favour this view. The aura of epilepsy, as is well known, sometimes consists of a feeling of fear; moreover, those who suffer from epilepsy may in abortive attacks experience the aura only, so that it might be suggested that in day-terrors we have an epileptic condition in which only the psychical symptoms corresponding to the aura of the major attack are present. There are, however, I think, some points which are opposed to this view. So far as the very scanty experience before us is available there is as yet no evidence that these children are specially liable to ordinary attacks of *petit mal* or major epilepsy, as one might expect if these attacks were indeed a masked form of epilepsy. The results of treatment, moreover, in the two conditions would seem to be very different, for while epilepsy is usually difficult to cure day-terrors seem to be easily cured by very simple treatment. Further, although the administration of bromide produces a rapid improvement in day-terrors apparently no such sedative is necessary. Such treatment as an alkali to remedy the digestive disorder which is present in some cases or the removal of threadworms or of any other local irritant would seem to be sufficient. These points, however, require the confirmation of further experience. Although, however, day-terrors are probably not to be regarded as masked epilepsy it seems certain that they are to this extent allied to epilepsy, that they are a form of paroxysmal neurosis, and as such no doubt fall into the same group of functional disturbances as migraine and *petit mal*. At the same time there is obviously only a narrow line between day-terrors and some forms of insanity; and perhaps one may sum up one's impression of pavor diurnus by saying that it is a paroxysmal psycho-neurosis allied to, but not identical with, epilepsy on the one hand and hysteria and insanity on the other.

From what has been said above it will be seen that whatever view may be adopted of the nature of day-terrors the same must also be adopted for night-terrors, and it is easy to imagine that just as the motor cortex is liable to be affected by a paroxysmal neurosis—viz., epilepsy—at night (and in some cases only at night), so also the higher centres may be

[3] Diseases of Children, sixth edition, p. 531.
[4] Brit. Med. Jour., August 19th, 1889.

specially liable to paroxysmal disturbance during sleep. The far greater prevalence of night-terrors than of day-terrors may well be related to the extraordinary sensitiveness and activity of some of the higher centres during sleep, which is seen in the readiness with which a stimulus which in the waking condition would produce little or no effect will during sleep start a whole series of reactions (dreams as we call them) in the higher centres. While, however, it seems most probable that both night-terrors and day-terrors should be regarded as paroxysmal neuroses, the attacks during sleep are in my experience rarely, if ever, idiopathic. Almost always an exciting cause can be found and its causal relation proved by the cessation of the attacks after its removal; and I should suspect, therefore, that day-terrors also will prove to be symptomatic rather than idiopathic. In the case of night-terrors my own experience has been that in the vast majority the exciting cause is some gastro-intestinal disorder, and by far the most common cause is that chronic catarrhal condition to which Dr. Eustace Smith gave the name of "mucous disease." The insidious character of this disorder may account for the discrepancy of opinion as to the part played by gastro-intestinal disorders in night-terrors. It is not the glaring case of diarrhœa or the troublesome case of vomiting that is to be looked for with night-terrors, but a much less obvious condition which has often not attracted the mother's attention at all. The children are "peaky" and thin, often languid and irritable, the face is pale or sallow with a bluish translucent puffiness of the lower eyelids, the appetite is capricious, the bowels are costive rather than loose, and the stools contain—not necessarily continuously but from time to time—an excess of mucus, or "slime" as the mother calls it. Sometimes there is some vague complaint of occasional abdominal discomfort and often threadworms are present. These are the symptoms which one finds so often with night-terrors, and whatever they may mean—and it seems probable enough that they indicate a chronic catarrh of the large intestine—their causal relation to night-terrors is made almost certain by the disappearance of the night-terrors when the gastro-intestinal disorder is cured. I have alluded to this point in some detail because it seems that day-terrors may be excited by this same reflex stimulus from the gastro-intestinal tract. In two of the three cases under my care this chronic catarrhal condition of the bowel was thought to be present and in both cases the good effect of potassium citrate, together with rigid dieting, was very marked. In Case 2 after a few weeks the child passed a large number of threadworms one day, and although the day-terrors had much diminished before this, both they and the night-terrors seem to have ceased since. The effect of constipation was marked in this case; it was particularly observed that the day-terrors were more frequent when the bowels were confined. In Case 3 the mother volunteered the information that the child complained frequently of stomach-ache, but apparently not at the time of the attacks. It seems, therefore, that the exciting cause of day-terrors is, in some cases at least, some gastro-intestinal disorder, but that the attacks are not due to any painful sensation. Some observers have thought that night-terrors are produced by respiratory difficulty, particularly by the obstruction caused by adenoids. So far as my own experience goes this is quite exceptional and there was nothing to suggest any such cause in the three cases mentioned above. At the same time it seems quite likely that if such peripheral irritation as the chronic disorder of the bowel mentioned above may be the exciting cause of day-terrors, other forms of irritation, such as interference with respiration by adenoids, might also cause them.

The immediate prognosis in day-terrors would seem to be good. They are easily diminished by treatment and probably the cure is permanent so long as the exciting cause, whatever it may be, is avoided. There is no experience at hand, however, to determine what the future of these children may be. It is an approved fact that epilepsy does occasionally occur in later years when night-terrors have occurred in childhood; and in such a case as the second, where there was a family history of neuroses, including epilepsy, the occurrence of day-terrors must cause some anxiety. The significance of day-terrors as a danger signal of tendencies to more serious neuroses in later life is probably graver than that of night-terrors, for the occurrence of day-terrors no doubt means that the nervous instability which favours night-terrors is present in larger degree.

The most important part of treatment is the cure of the exciting cause. The chronic intestinal catarrh mentioned above calls for rigid dieting, particularly the exclusion of potatoes, pastry, and sugar, and at the same time the administration of an alkali. Potassium citrate is the drug I have found most useful, and this may be given with iron and compound decoction of aloes as recommended by Dr. Eustace Smith. Threadworms or other causes of irritation must be removed by suitable treatment. The intestinal disorders are not likely to be cured off-hand, and it may be desirable therefore to use sedatives as well. The good effect of bromides is almost immediate, and given in combination with belladonna they produce a very rapid diminution in the number and intensity of the attacks. Lastly, if night-terrors are, as Dr. Goodhart puts it, the "slacken-speed" to the engine-driver, then *a fortiori* I think day-terrors must be regarded as an indication for the utmost caution in the matter both of school and of play. A child who has had day-terrors is not the child to be goaded up to the inspector's standard, nor is it to be made the show-child of a kindergarten. In school and in play the child must be kept as far as possible from all excitement and mental strain. The cruelty and baneful effects of frightening such children, whether in punishment or in jest, hardly need to be mentioned here.

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SOME REFLECTIONS UPON APPENDICITIS.

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NOTWITHSTANDING the results universally obtained by the timely adoption of surgical measures in appendicitis many still maintain that a large percentage of recoveries follows medicinal or expectant treatment and that surgery is, to say the least, superfluous in those cases which they designate catarrhal or simple appendicitis. Also opinions are by no means in unison as to the etiology of this complaint; some claim the universal provider, uric acid; some attribute it to the irascibility of the bacillus coli; others give mechanical reasons; while not a few, including the writer, consider it to be of mixed origin. I should like to suggest for the consideration of bacteriologists the possibility of the germ (or a congener) of acute infective arthritis (rheumatic fever), which seems to have a partiality for waging war *viâ* the lymphoid tissue, taking a prominent part in the attack.

The general practitioner may well say, "For modes of faith let graceless zealots fight," but what am I to do or think when called on to treat a case of appendicitis? He may console himself with the idea that the majority of observers agree that the disease is primarily a local one, probably caused by some mechanical irritation which lessens the vitality of the tissues and thus renders them an easy prey to infective microbes, and that this apparently functionless organ is particularly prone to infection, congestion, ulceration, and gangrene on account of its peculiar anatomical formation, limited blood-supply, and trap-door situation. As to treatment, it may with advantage be remembered that "the heresy of one generation is the creed of the next." It appears somewhat paradoxical that pathology cannot be reckoned on to give much assistance in simplifying matters, for many medical men of high repute refuse to admit the justification, much less the necessity, of examining the affected organ except by touch through the thick layers of the abdominal muscles, and to a great extent they draw their pathological inferences from general clinical manifestations, while others hold that inspection of the lesion is a *sine quâ non* in arriving at a correct conclusion. Considering the ubiquitous prevalence of the malady and the thousands of operations which have been successfully performed for its relief, surely such confliction of ideas is not consistent with the advanced state of our science.

From a personal experience of 72 consecutive operations for appendicitis I have learned not to place much value on ante-operative classifications, such as catarrhal, suppurative, and gangrenous, for I have frequently observed that such fine-drawn distinctions are illusory; to say the most they only imply mere transition stages of the same disease, which cannot be differentiated with certainty without abdominal exploration. I should think there are few surgeons who if called into consultation in a case of appendicitis, and finding

the patient with a drum abdomen, rapid pulse, and vomiting, would not sum up the condition as perforation with diffuse infective peritonitis, or if they met with a tense, painful, circumscribed swelling in the cæcal region would not diagnose appendical abscess. Place aside these two obvious and late phases of the affection I venture to ask, Is there a physician or surgeon to be found who can define the pathological condition sufficiently correctly on which to base scientifically an expectant plan of treatment? Is it possible to exclude a rapidly thinning stricture? Can early abscess formation between adjacent coils of bowel be eliminated? Can it be positively stated that the appendix is only congested, not distended with feculent pus, or that it is not rapidly becoming gangrenous, that there is not some foreign body or infective concretion on the verge of bursting into the abdominal cavity, and can the formation of protective adhesions be divined? I make bold to assert emphatically that these questions can only be answered by the introduction of the sense of sight and that clinical inferences are often miserable delusions in this disease. Imagine the feelings of an educated medical man on finding the patient whom he left at night with a flat abdomen and in a good general condition on his arrival the next morning with a blown-out abdomen and all the symptoms of peritonism—no retreat but the grave. Is this a fanciful picture? I challenge anyone who has had any experience worth mentioning in appendicitis to deny the insidious rapidity with which a "simple" case may become converted into a fatal one.

Some may ask, Why operate in every case when a large percentage undergo spontaneous cure? My reply is: (1) I cannot say at the onset of any case that spontaneous cure will take place; (2) I am unable to guarantee that perforation without previous formation of protective adhesions may not suddenly occur, which complication in my experience is invariably fatal; (3) cœliotomy with removal of the appendix is the most accurate method of diagnosis and cure with which I am acquainted, the operator is to be congratulated for his promptitude if he only encounters the catarrhal variety, and, moreover, the patient is comforted with the assurance that the operation, proved to be a simple one and devoid of risk, ensures that he will never again suffer from appendicitis; and (4) I am sceptical as to large numbers of expectant "cures." An appendix once infected is always infected and remains a weak spot, and although in some cases no actual recurrence takes place yet in a great many permanent adhesions have formed around the appendix and the cæcum which cause chronic digestive disturbance with or without dragging pain and tenderness in the right iliac fossa. The appendix during an attack frequently becomes glued to adjoining structures. On two occasions I found it adherent to the right ovary and in each instance it caused chronic ovarian irritation. Occasionally I found it adherent to the pelvic floor, tying down the cæcum in a tent-rope fashion. In such cases pain, tenderness, and flatulence had been complained of for a long period. Removal of the adhesions and the tent-rope appendix effected a permanent cure.

Another condition which deserves mention is the influence of an abnormally short meso-appendix on the movement and shape of the appendix. On four occasions I operated purposely to relieve chronic indigestion, with pain and tenderness at McBurney's point, and found that the appendix was bound down below the cæcum by a stunted meso-appendix, with kinking, at the point of the distal attachment of the mesentery. In each instance it was impossible to raise the appendix to the surface until the meso-appendix was divided, whereupon it could with facility be lifted out of the wound. It is not hard to realise that each time the cæcum became distended with fæces and gas a kind of tent-rope action came into play and caused the above symptoms. I cannot imagine a more dangerous condition in case of the supervention of an attack of appendicitis, for it is obvious that stricture and perforation would rapidly take place at the site of kinking. I may mention that the four patients were cured of their chronic trouble by removal of the appendix.

The following case affords a good illustration of such a danger. A few months ago I had the pleasure of being assisted in an operation for appendicitis by Dr. Barry of H.M.S. *Pegasus*. We found the appendix bound down behind the cæcum by a stunted meso-appendix and at the point of the distal attachment of the latter there was marked angulation. The distal end of the appendix was intensely inflamed and contained a concretion of about the size of a pea, while the proximal portion appeared to be perfectly normal. After removal it was found that there was a stricture at the site of the kink, with ulceration extending through all the coats excepting the serous one; and as no external adhesions were forming it may be reasonably inferred that the operation not only cured the appendicitis but saved the patient's life. He would indeed have been a far-seeing clinician who could have inferred the pathological lesion of this most interesting case.

It would be superfluous for me to mention anything about the danger of intestinal bands forming after inflammation in this region further than to refer anyone interested in this matter to Mr. Treves's most excellent work on "Intestinal Obstruction." Another proof of the difficulties which attend diagnosis came under my observation on Nov. 5th, 1899. A strong young man was suddenly seized with severe pain in the umbilical region on Oct. 26th. He vomited frequently during the next three days and complained of fever and constipation, with pain and tenderness in the right lower abdomen. The first medical man in attendance was said to have diagnosed gastric influenza and administered a purge which acted freely; nothing abnormal was found in the stools. A second medical man was reported to have said that it was inflammation of the liver and advised his removal to Buenos Ayres, which meant a long drive and a train journey of 350 miles. On admission to hospital on Nov. 5th his temperature was 100° F., the pulse was 80, the tongue was furred, and his gait was "down on the right." He volunteered the statement "that he felt better"—in fact, he thought "the trip did him good." Abdominal examination showed that there was no distension or limitation of normal respiratory movement and no redness or localised tumefaction. He complained of slight pain in the right inguinal and umbilical regions, with slight tenderness on palpation, *not* particularly marked at McBurney's point. No tumour could be detected, but there was a distinct board-like feeling of the right oblique muscles, and movement of the right lower limb caused him some pain. On Nov. 6th the morning temperature was 99°, the bowels responded readily to a soap-and-water enema, the tongue was cleaning, muscular resistance was diminished, and the pulse was 76. In the evening the temperature was 99·6°. On Nov. 7th the morning temperature was 98·2°. There was no further development in the abdominal symptoms and he felt "almost well." Diagnosis, convalescence from appendicitis. Considering the out-of-the-way place in which the patient resided I advised the removal of the appendix as a matter of future safety, to which he consented. The evening temperature was 98·6°; the bowels again acted with an enema. On Nov. 8th the temperature and pulse were normal and the patient felt "quite well." Chloroform was administered and on deep palpation a hard tubular form of swelling was found in the cæcal region extending upwards along the line of the ascending colon. Cœliotomy was then performed; the cæcum presented a normal appearance, but on searching for the appendix the cæcum and the ascending colon were found to be densely adherent on their posterior surfaces to a hard mass deeply situated in the right iliac fossa. The adhesions were being gently separated from the outer side when a sudden gush of fœtid green pus (about four ounces in all) took place, which came from a long narrow abscess cavity situated directly behind the cæcum and the ascending colon, and extending from the brim of the pelvis almost to the lower border of the liver. The pus was sponged out and the pyogenic cavity was laid open in its entire length. After a prolonged and difficult search the appendix was found to be disorganised and firmly adherent to the posterior surface of the cæcum, with a small perforation at its junction with the latter. (The absence of marked tenderness at McBurney's point I presume was due to the position of the appendix.) The appendix was cut off flush with the cæcum in order to embrace the perforation and the wound in the bowel was closed by a layer of sutures. A large drainage-tube was placed alongside the cæcal wound and the usual dry dressing was applied. Three days later a fæcal fistula occurred; an abundant discharge of fæces continued for a week and then spontaneously ceased. An uninterrupted recovery followed. I do not take the least credit for the successful result, for I failed to recognise the true nature of the condition until chloroform was administered for quite a different purpose—viz., to remove the possibility of recurrence.

In my 72 cases there have been four deaths—three due to ante-operative perforation with diffuse infective peritonitis and one to pyophlebitis in a suppurative case of one month's duration before admission to hospital. In 26 cases there was suppuration with localised peritonitis, which in some instances had invaded by direct contiguity two or three coils of adjacent bowel. Needless to state, no selective process was adopted in this series and the death-rate—5·5 per cent.—may not compare unfavourably with other methods of treatment.

It has been my practice for some few years past to operate as soon as possible after diagnosing the complaint. The local skin disinfection having been gently carried out McBurney's coeliotomy is performed, and if any tumefaction is felt the incision is made directly over it. I cannot see any necessity for semilunar or median incisions, for in the majority of cases by careful sponge packing the general peritoneal cavity can be more easily shut off through the oblique incision. Some time ago Sir William Banks called attention to the value of attacking an appendical abscess extra-peritoneally, and my experience tends in every way to confirm the teaching of that distinguished surgeon.

Many surgeons still advocate leaving behind the appendix when obscured by adhesions in the face of pus. In this I cannot agree, for I know of four cases where suppuration recurred, eventually necessitating removal of the organ. I make it a rule never to quit the abdomen when operating for appendicitis without removing the appendix, and on three occasions I proved the value of my resolve, for I discovered a second collection of pus when searching for the appendix which undoubtedly would have been otherwise overlooked. I have over and over again broken down intestinal adhesions and have never yet caused fresh infection, which I attribute to the fact that I strive to let the light into a pus collection and clean up before proceeding further.

The key of the situation is, without doubt, *patience*. It is surprising what changes can be wrought in a foul appendical abscess cavity by five minutes' gentle sponging and a pair of good retractors. The trouble and time taken are amply rewarded when the *fons et origo mali* is brought into view and removed. Leaving a moribund appendix in a living abdomen is not sound surgery.

Buenos Ayres.

FURTHER OBSERVATIONS ON PERNICIOUS ANÆMIA (SEVEN CASES): A CHRONIC INFECTIVE DISEASE;

ITS RELATION TO INFECTION FROM THE MOUTH AND STOMACH; SUGGESTED SERUM TREATMENT.

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(*Continued from page 224.*)

THE first part of this paper will serve to explain the origin and development of my interest in the mouth in connexion with pernicious anæmia. In all of the cases, it will be seen, there was found some morbid condition sufficient by its character or its intensity to attract the special attention of either the patient or myself. The actual conditions met with were:—1. Marked cario-necrosis of the teeth, antecedent or existing, in all cases. 2. Conditions of glossitis or stomatitis, characterised by great tenderness, presence of sores, and salivation (in four cases): (*a*) In no fewer than four cases the condition of the mouth formed one of the chief subjects of complaint on the part of the patient (Cases 1, 2, 4, and 8). (*b*) In all of the four cases the morbid condition of the mouth seemed to be connected with the origin of the disease, either preceding the weakness (Cases 1, 2, and 8) or being most troublesome in the early stage of the disease (Case 4). In other words, the condition was not simply the result of weakness; on the contrary it was most marked at the commencement where the anæmia was slight, and in each case became less marked as the anæmia increased. (*c*) In two cases (Cases 2 and 8) the patients themselves in their own minds connected the onset of their weakness in some mysterious way with the stomatitis. As one of the patients strikingly put it, "the trouble of the mouth seemed to go right through him." 3. In all cases there was evidence of gastric or intestinal trouble, or both—discomfort, sickness, retching, vomiting, diarrhœa—and in two cases (in which were present morbid conditions of the mouth, dental caries, glossitis, or stomatitis) there was gastritis (Case 1) and infective gastric catarrh (Case 8). 4. Lastly, the possibility of any connexion between the dental and oral condition and the gastric condition was elucidated by the case (Case 7) in which I was able to demonstrate in the most striking manner the origin of infective gastric catarrh from infection with the organisms of dental necrosis.

IV.—DENTAL DISEASE AS A CAUSE OF INFECTIVE GASTRITIS.

Case 7 I regard as specially interesting. It demonstrates to my mind a relationship between cario-necrosis of the teeth and gastric catarrh, of a closer and more direct character than I had hitherto recognised, or, so far as I know, had been recognised by others. That relationship I may thus describe: that there is a limit to the capacity even of the stomach to resist indefinitely for periods of years the continuous presence of pyogenic (pus-forming) and other organisms in its contents derived from cario-necrotic conditions of the teeth; that its powers of destroying such organisms, although great, are never complete even in health; that these powers become progressively weakened when through any cause an increased and continuous supply of infective organisms is associated with a diminished and continually lessening acidity of the gastric juice; that these two conditions are precisely those produced by chronic cario-necrosis of the teeth; and that in time the catarrh of the stomach, so common a sequel of imperfect dentition—possibly of simply irritant nature to begin with—may in time become infective in its character, leading in time to the deeper-seated changes which always result from chronic catarrh—viz., atrophy of secreting structures, with increase of fibrous tissue (chronic gastritis with atrophy of the glands).

These statements as to the relation between dental cario-necrosis and gastric catarrh I have elucidated and supported elsewhere;[1] but some brief reference to the subject is here necessary to a right understanding of our present subject—to wit, the meaning and significance of the dental and oral conditions met with in pernicious anæmia.

The relation between dental disease and ill-health.—That health is to a large degree conditioned by the state of the teeth—their presence or absence, their soundness, their freedom from pain—is generally recognised; but if inquiry were made as to the nature of the connexion opinions would be found to differ. 1. In the minds of most, probably, the relation is what one may term a "mechanical" one. Carious teeth mean imperfect mastication, consequent increased and unnecessary work for the stomach, this leading in course of time to the various ills and worries connected with impaired digestion. Such a mechanical relation is by no means the only or the most important relation of dental disease to general health. 2. In the minds of others the connexion between bad teeth and bad health is supposed to be of another kind—viz., that bad teeth denote bad nutrition and bad health. They are the result of ill-health rather than the cause of it. 3. A third possible relationship—one that appears to me to be altogether insufficiently recognised, still very obscure, but in my opinion even more important than either of the two above mentioned—is dental disease as a cause of ill-health in consequence of being a continual source of septic poisoning and septic infection, both local and general.

Local infections.—Among the obvious conditions of this nature are the various local inflammatory and suppurative conditions met with in the mouth (periostitis, alveolar abscess, suppuration around decayed teeth, and pyorrhœa alveolaris); or in the jaws (periostitis, osteitis, osteomyelitis, necrosis, and suppuration in maxillary sinuses), or in tissues adjacent to the mouth (inflammation and suppuration of the glands of the neck, cellulitis of the neck, post-pharyngeal abscess, thrombosis of the vein, and even meningitis by direct extension).

Remote infections.—Among the remote conditions of infective nature the origin of which is still obscure and

[1] Relations of Dental Disease to General Diseases and to Infective Gastritis, Transactions of the Odontological Society of Great Britain, Feb. 6th, 1899.

which may in certain cases be traceable back to infection from the mouth are such conditions as acute osteomyelitis, acute necrosis occurring apart from injury, suppurative meningitis, empyema, ulcerative endocarditis, and acute nephritis. The special interest of dental disease in connexion with this class of cases arises from this: that dental cario-necrosis is the commonest and most prevalent infection in the body; and that this infection is of a "mixed" character, including not only harmless organisms, but also the most active pathogenic blood-poisoning organisms—viz., streptococci and staphylococci.

Bacteriology of dental caries.—On this point—the infective nature of dental caries—I need not dwell. The evidence so abundantly furnished by the laborious bacteriological observations of Miller (1884–1894) on no fewer than 250 cases of diseased teeth, of Galippe and Vignal (1889), of Jung (1893), and most recently of Professor Arkovy of Budapest (1878–1898) seems to me conclusive. With the minutest bacteriological precautions, which I have detailed elsewhere,[2] the last-mentioned observer has in 43 cases studied in detail the organisms found in the most various conditions of teeth—e.g., gangrene of pulp (both acute and chronic), chronic alveolar abscess, old stoppings, &c. The chief result of the observations from the dental point of view is to show that one organism is constantly to be found in diseased pulps and in dental caries (the bacillus gangrænæ pulpæ), possessing the power single-handed of producing gangrene of pulp and of effecting softening of a tooth *even in an alkaline medium*. Its frequency as compared with other organisms was 95·3 per cent. Next most frequent and from my present point of view even more important, were various forms of pus-organisms—viz., staphylococcus pyogenes aureus, 34·8 per cent. of cases; streptococcus pyogenes, 23·2 per cent.; staphylococcus pyogenes albus, 18·6 per cent.; bacillus pyocyaneus, 9·3 per cent.; and staphylococcus pyogenes citreus, 4·6 per cent., with nine other organisms, mostly harmless, in varying frequency. The pyogenic organisms were always absent in teeth successfully dealt with antiseptically.

The significance attaching to these observations in the present relation is not the mere presence of such organisms in connexion with dental caries. Their mere presence in the mouth does not constitute disease of the mouth or elucidate the pathology of stomatitis, any more than the almost constant presence of the pneumococcus in the mouth constitutes pneumonia or elucidates its pathology. Infective disease in the mouth as elsewhere is not, fortunately, a mere question of the presence of an organism, however pathogenic, but a question of *dose* and *resistance*. And in the case of the mouth the question of dose becomes a very important one when we have to deal, not with an isolated carious tooth but with a whole series, sometimes a whole mouthful, of such teeth, not only dark and necrotic themselves, but lying in inflamed, possibly (as in Case 7) actively suppurating, sockets. The effects of such a condition I consider to be twofold: one a general and the other a more local effect. The general effect is a septic absorption from the diseased teeth and sockets, which, continued as it often is over many years, must in the aggregate be of remarkable extent. The local effects are primarily on the mouth itself, and are sufficiently obvious in the oral sepsis so common in such cases; secondarily on the stomach. The continous swallowing of mouthfuls of pus organisms is not tolerated indefinitely by the stomach mucosa. The number of organisms that enter the stomach from the mouth is very large, the most of them to be destroyed, fortunately, by the gastric juice. But this is by no means true of all. A very considerable proportion (as many as eight out of 25 according to Professor Miller) are to be found in the stomach contents. The observations of Macfadyen and others show that only a certain proportion are destroyed by the gastric juice. It is only when the acidity of the gastric juice is considerable—e.g., an hour or two after food—that it exercises any direct bactericidal action.

In long-standing dental disease the conditions are thus precisely those most likely to produce infection of the stomach—viz., on the one hand, diminished resistance, i.e., diminished acidity as a result of the chronic indigestion and catarrh, and, on the other hand, increase of dose, i.e., increased supply of pus organisms from the necrotic teeth. That under such circumstances disturbances may arise, and constantly do arise, from abnormal fermentative processes in the stomach is a fact to which both clinical and pathological experience testifies, and one, too, that is generally recognised. What, however, Case 7 demonstrates is that the effect is not limited to a mere fermentation of food products, but that actual infection of the mucosa with pathogenic organisms may itself occur. The mucosa of the stomach continuously exposed to infection—e.g., of pus organisms from the teeth—becomes eventually infected. An infective catarrh is set up and sustained by continuous influx of organisms into the stomach, and if continued long enough this chronic catarrh leads to the usual effects of a glandular catarrh—viz., glandular atrophy with increase of interstitial tissue around.

These considerations as to the possible effects, both general and local, of long-continued dental and oral sepsis are of no mere theoretical interest. On the contrary, they are, to my mind, of supreme practical importance, exemplified as they are (to a degree which I consider altogether insufficiently recognised) in almost daily experience by the cases one meets with of gastric catarrh in association with dental decay. The ashy-grey look and general languor which such patients, in my experience, characteristically present I regard as manifestations of long-continued septic absorption; while the local symptoms of clamminess of the mouth, distaste for food, coated tongue, and indigestion, which one simply looks upon as manifestations of gastric catarrh, may really be, as in the case which I have described (Case 7), the result of infective gastric catarrh produced by direct infection of the stomach with the pus organisms. Case 7 appears to me to present points of unique interest in demonstrating the actual relations between dental infection and gastritis—viz., the history of nausea and vomiting; gastric pain extending over a period of months; the pain so severe as to necessitate the use of opium and suggesting cancer; the scrupulous cleanliness of tooth-plates and the healthiness of the gums; the absence of all teeth except three carious ones, these latter discharging pus from their roots; the removal of these three; the immediate improvement, temporary in character; the recurrence of sickness and vomiting; the vomit three weeks after removal of the teeth still loaded with pus organisms; the administration of salicylic acid as a local antiseptic; the entire cessation of all gastric symptoms in three days; in three months a gain of a stone in weight; and, lastly, the permanency of the cure. Fifteen months later the patient wrote that she had never had any return of the sickness.

V.—THE RELATION OF DENTAL CARIES AND STOMATITIS TO PERNICIOUS ANÆMIA.

I have been careful in the foregoing section to define as clearly as possible what I consider to be the relation which frequently exists between dental cario-necrosis on the one hand and gastric catarrh with general ill-health on the other. I have done so by way of clearing the ground for what now remains to be considered—viz., the significance to be attached to the oral conditions met with in the foregoing cases of pernicious anæmia and their relation to the anæmia. The first statement which I have to make is that to the various morbid conditions of the alimentary canal occasionally met with in cases of pernicious anæmia must be added certain morbid conditions of the mouth—viz., dental cario-necrosis, glossitis, and stomatitis. The other morbid conditions include—(1) atrophy of the mucous membrane of the stomach or of the gastric glands and chronic gastritis (Fenwick, Nothnagel, Nolen, and Hunter); (2) ulcers of the stomach and duodenum (Zahn); (3) duodenitis (Homolle); (4) chronic fibrotic changes, with more recent hyperæmia and necrosis of colon (Morley Fletcher[3]); (5) cicatrices of healed ulcers and a little diphtheritic exudation in the larger intestine (Hale White[4]); (6) degenerative changes in the abdominal sympathetic ganglia (Banti) or in the nerves and ganglia of the intestinal walls (Sasaki); (7) the presence of intestinal worms (Baumber, Reyher, Rimeberg, Sahli); and (8) cancer of the stomach.

In estimating the significance of these conditions in relation to pernicious anæmia, the standard of criticism I used was, that only in isolated cases had such changes been found; and that similar changes, sometimes even more marked, were constantly met with without any of the features of pernicious anæmia. As the causes of the anæmia sometimes found associated with them I could not therefore regard them. To the oral conditions which I have

[2] Op. cit.

[3] Transactions of the Pathological Society of London, 1899.

[4] Guy's Hospital Reports, 1890.

new described I have to apply the same standard, and with a like result. Dental carlo-necrosis is far too common to be itself the cause of so rare a disease as pernicious anæmia. Stomatitis and glossitis although not so common are also too common to be the direct cause of so rare a disease; as the essential anatomical condition underlying the disease, even in the cases in which they are present, they cannot therefore, in my opinion, be regarded. Nevertheless, while they cannot be regarded as causes of the disease, they have, I consider, a very special significance, especially the conditions met with in the tongue. Their mode of onset, their character, and their progress, all denote, I consider, their infective nature, *and the special significance attaching to them in my mind is that their existence points to an infection of a definite character localised to the alimentary tract.*

Special Features of the Stomatitis.

Mode of onset.—The origin of the stomatitis was in all cases as mysterious, sometimes as sudden, as the weakness itself. The conditions were not simply the result of the anæmia. On the contrary, when they were of a character (by discomfort or painfulness) to attract the attention of the patient, they were always noticed at the onset of the disease or early in its course, and in most cases they actually subsided as the anæmia progressed. So closely connected were they, indeed, with the origin of the disease that in three cases they were among the first symptoms noticed and complained of, and in three cases the patients dated their weakness from the onset of the trouble in the mouth, one patient of his own accord describing his illness "as if the trouble in his mouth had gone right through him."

Definite character of the infection.—In the first case I observed, I was struck by the curious character of the sores on the tongue—localised inflamed patches sometimes showing vesicles filled with clear serum situated under the tip of the tongue, the inflamed areas shifting from time to time, with atrophic appearance of the intervening mucosa. The condition thus described is not one of ordinary stomatitis or glossitis such as one meets with as the result of the local irritation of decayed or irregular teeth. And this appears to hold true for the other cases described, as much from the intensity and character of the glossitis as from the situation of the sores. Thus in Case 1 the terms used to describe the condition of tongue are "tongue extremely raw and tender," "presenting a red and fiery appearance," "tenderness on swallowing extending down the throat to the stomach," likened by the patient to that of "swallowing fire." Nine months later the description was: "Whole tongue tender. On dorsum and along edges patches of more fiery redness, some under the tip of tongue showing small inflamed vesicles free of serum." Compare this with the description given by the patient (Case 3) of the condition of his tongue for a period of seven months of his illness: "Tongue raw and tender, looking like a piece of raw liver ..... causing great pain." Or with that given by the patient (Case 8) when illness began: "Some sort of painful sores in mouth under the tongue ..... not connected with the teeth ..... causing great discomfort," of such a character and intensity that his subsequent illness he described—"as if the trouble in his mouth had spread down into stomach and right through him." These are not, I conclude, the characters of an ordinary stomatitis. They appear to suggest an infection more deep-seated and severe.

"*Periodicity*" *of the stomatitis.*—Another feature I have had to note is what I may term the "periodicity" of the stomatitis—its variability from time to time, independently apparently of treatment, notably its greater severity at the outset of the disease, usually tending to subside or at least to give less discomfort as the disease advances. This feature was very noticeable in Case 1. Thus the illness was ushered in (in the autumn of 1886) with sore throat and diarrhœa, from which time "he continued to suffer at times from an inflammatory condition of throat and tongue, and his strength began gradually to fail." In January, 1888: "With the exception of some congestion of the throat and certain pale red spots on the tongue nothing further objective to be made out" (note by Sir T. Lauder Brunton). June, 1888: "Tongue extremely raw and flabby, fiery, and tender, inflamed patches with smooth mucosa between." March 9th, 1889: "Tongue not so raw-looking. Presents a more atrophied appearance, still inflamed vesicles full of serum, whole tongue tender, and mastication painful and difficult." March 20th: "Tongue lost its former fiery-red appearance, much paler, inflamed patches less marked, and vesicles entirely disappeared." And from this time onward till the death of the patient two months later the tongue ceased (for the first time since his illness began) to give him any trouble. It continued to present a smooth, flabby appearance, but the tenderness on eating was entirely lost—"he could take all kinds of food and even condiments without the slightest discomfort." The same "periodicity" is noticeable in Case 3. For a period of some seven months (October, 1894, to May, 1895) at the commencement of the illness the tongue was raw and tender, "like raw liver," causing great pain. When seen by me (October, 1895) the tongue showed nothing to attract my attention. So also in Case 8. When the illness began (June, 1898) there were painful sores under the tongue causing great discomfort When seen by me in April, 1899, there was nothing noticeably wrong about the tongue, although there was constant salivation. During the latter part of the patient's illness (he died on Dec. 3rd, 1899) "salivation occurred when he had stomatitis; the latter was always a bother. The mouth was always clammy and uncomfortable."

I note this feature of the mouth condition, its periodicity, for this particular reason—that it recalls one of the most striking characters of the disease itself. There is perhaps no single feature of the disease more notable than the mysterious way in which, whether under treatment or not, it varies from period to period without known cause. Here, then, locally in the mouth and tongue, one has had occasion to note equally striking and unaccountable variations in intensity of what is obviously a local infective process—an intensity varying from a fiery-red inflamed appearance of tongue with intense tenderness lasting more or less over a period of several years—to a condition seen for a short time before death, when nothing was observable in the mouth except a slight atrophic appearance of the tongue and all kinds of food and drink could be taken without discomfort of any kind. Had I first seen the patient during these last weeks of his illness I could never have judged from the condition of his tongue that anything special had been wrong, the only sequel of the inflammation being a pale and atrophied appearance of the mucosa of the tongue.

This remarkable periodicity I desire to emphasise. For it irresistibly suggests the thought that if an infective process so severe in its character, so distressing, can affect one portion of the mucosa of the alimentary canal and yet disappear without leaving any obvious lesion—at most a slight atrophy, a similar infective lesion may affect other portions of the mucosa of the alimentary tract lower down, cause grave symptoms, and yet leave no obvious trace behind. In other words, an infection similar to that found in the tongue may well exist lower down, especially in the stomach, possibly in some cases in the intestine.

Such an infection of the stomach or intestine or both I consider to be the true pathogeny of this disease, and to be evidenced by and accountable for two of the striking features of the disease—(1) the prevalence of gastric and intestinal symptoms (vomiting and diarrhœa) during life; and (2) the frequency with which no obvious morbid lesions are discoverable after death, or when discoverable are found confined to the gastro-intestinal tract, especially to the stomach (gastritis, atrophy of glands, &c.).

Frequency of stomatitis in 200 cases.—The interest I attach to the condition of mouth which I have described is altogether apart from any question of its frequency or of its importance as a stomatitis. Nevertheless, in the light of these observations I have been interested in examining the records of cases with special reference to the conditions observed in the mouth. I have so far examined 200 cases, and I find references to stomatitis in 18 cases. These I append. Few as the references are, they are, I think, of interest in respect chiefly of the remarkable similarity of the appearances described by independent observers to those which I have above described. The fullest notes are those of Laache, who found the condition in four cases out of 11. His description of Case 3 might have been written for Case 1 of my own, in respect especially of the features which I have above described as specially noteworthy—viz., the tenderness, the excoriations, and the "smooth polished" (or, as I have said, "atrophied") appearance subsequently presented by the tongue. It is also notable as being the only one I can find where attention is drawn to a specially carious condition of the teeth. Of Laache's cases, Case 4 and Case 10 are also to me noteworthy in respect of the mode of

onset. In both cases the condition of the mouth was noted "at same time" as the onset of the illness. Dr. Bramwell's case is also noteworthy in the same connexion; there the condition of the mouth preceded the illness.

I do not suppose for a moment that the smallness of the number (18 out of a total of over 200 cases) represents accurately the frequency of this morbid condition of the mouth. When once noted the condition is so striking that it is looked for in other cases; and in this connexion I note that out of the total of 22 cases no fewer than 15 are reported by four observers—five by Müller, four by Laache, two by McPhedran, and four by myself. Only one observer (Müller) draws special attention to the condition, and he was disposed to regard it as an effect of the blood condition. Eichhorst thought that on account of the pain which it caused it might not be without significance.

References to stomatitis.—(The italics are mine).

1. Müller[5] (62 cases). Cases 20 and 23: "Stomatitis." Case 29: "Complains of very painful spots on the tongue which make eating almost impossible." Case 38: "Small ulcers in mouth which make eating almost impossible. Case 39: "Stomatitis (small ulcers on the tongue and on the mucous membrane of the mouth)." Müller notes in general with regard to them "that they were very resistant to local treatment, disappearing spontaneously or with temporary general improvement, to recur again without special cause, causing great discomfort to the patient, and great pain on eating and drinking." He thought that the stomatitis probably had some connexion with the alteration of the blood, that certain chemical products in the blood mixing with the secretion of the mouth caused irritation and ulceration in a manner similar to that described by Mosler for the parotid secretion in other diseases.

2. Eichhorst[6] (91 cases) mentions the above observations of Müller, concluding that sometimes possibly on account of the pain they caused "they were not without significance." I find no mention of the condition in any of his own (seven) cases except one (Case 6) where he speaks of a "bad taste in mouth."

3. Laache's[7] cases (11):—Case 1: "Post mortem.—On the left aryteno-epiglottidean fold a round, greyish-white raised spot, the size of a pea, resembling an aphthous *erosion*, but showing on microscopic examination no mycelium of oidium albicans. On the back wall of pharynx a slightly raised ulcerating patch the size of a bean." Case 3: "*Tongue smooth*, clean, without *sign* of *papillæ*. It is considerably *hacked at edges* and *painful* here. Some small *excoriations* in both angles of the mouth. *The teeth partly fallen out, the remainder very carious.*" Later: "He complained not so much of weakness, as of the *mouth*, which is *sensitive* and *tender* (one sees as before fissures in angles of mouth; the tongue is smooth, clean, hacked at edges). He mentions he has of late lost all taste and that he had no sense of smell for several years." Two months later: "*Tongue* and throat to a considerable degree *smooth* and *polished*." Case 4: The illness began with sudden onset of diarrhœa. "*At same time* he became 'skinless' (*hautlos*) in mouth" (mouth feeling skinned). Case 8: "Tongue moist, slightly furred; no excoriations here or on lips." Case 10: History.—"In course of last winter and spring his appearance became bad, and *at the same time* he had a feeling '*of a wound*' in mouth and down the throat which prevented him taking anything but cold, fluid, and bland foods."

4. Dr. Hale White[8] (29 cases). Case 14: "Complains of a coppery taste in the mouth." Case 20: "Tongue pale and flabby, partly furred, partly *raw* and *fissured*." Case 27: "Vomiting and a *burning sensation in the mouth* with epigastric pain."

5. My own collected cases (44). Among 44 cases which I have so far analysed (from the literature of the disease between 1890 and 1894) I find the following: (1) "Subject to attacks of diarrhœa at short intervals and irregular vomiting. The mouth sore and anus excoriated." Arsenic always caused disturbance of stomach and bowel in a few days, "with a *metallic taste and soreness of the mouth*" and increase of the anal affection."[9] (2) A child, aged two years, admitted for ulceration, stomatitis, and anæmia. *Exacerbations in the stomatitis*, the latter finally extending until it involved the alveolar spaces and caused the loss of two or three teeth; and finally a sequestrum three-quarters of an inch long was removed from the jaw. Post mortem.—Stomach "*evidence of acute or chronic gastritis.*"[10] (3) "Often vomited. *Stomatitis was troublesome* and also diarrhœa."[11] (4) Bleeding of the gums first noticed, then profuse nausea. "Tongue was clean; on left side was a deeply-drilled-out *ulcer* which accounted for some of the blood which escaped. The gums were spongy and bled on being touched."[12] (5) "For some time his mouth had felt very rough and dry." Nausea was present.[13]

6. Dr. Byrom Bramwell[14] (48 cases). Case 43 (1898): Illness of several months' duration. Apparent *cause* "the patient herself blames mental worry. A year ago she began to be troubled with sore gums (inflammation of the gums, buccal mucous membrane, and side of tongue)."

(To be concluded.)

[5] Die Progressive Perniciöse Anämie, Zürich, 1877.
[6] Die Progressive Perniciöse Anämie, Leipsic, 1878.
[7] Die Anämie, Christiania, 1883.
[8] Guy's Hospital Reports, 1890.
[9] Dr. McPhedran: Medical News Philadelphia, 1890, pp. 367-368.
[10] Dr. Holt: Medical Record, New York, 1891, p. 410.
[11] Dr. McPhedran: Internat. Clinics, Philadelphia, 1892, vol. i., pp. 39-47.
[12] Sir R. Douglas Powell: Clinical Journal, London, 1893, vol. ii., pp 241-244.
[13] Dr. Russell: Brit. Med. Jour., vol. i., 1894, p. 298.
[14] Anæmia and Diseases of the Blood-forming Organs, Edinburgh, 1899.

SOME

EXPERIMENTS ON THE STERILISING PROPERTIES OF UNCONFINED SUPERHEATED STEAM.

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As long as there remain infectious diseases the *contagium vivum* of which is undiscovered the conditions necessary for the sterilisation of things suspected of being contaminated by them must remain a matter of conjecture. We have to ask ourselves: may we reasonably assume that these unknown germs succumb to conditions which are fatal to the most resistant of the known *pathogenic* microbes? or must we allow as a reasonable possibility that they may be still more resistant, or even as much so as the hardiest micro-organisms known? In other words, must we aim at killing the dried spores of the hay bacillus? or may we reasonably be content with an amount of sterilising sufficient to kill the dried spores of the bacillus anthracis?

We do not attempt to answer this question, nor do we claim, though this paper deals with unconfined steam only, that it, whether saturated or superheated, is capable of destroying, within a reasonable time or in one operation, the spores of the most resistant of *non-pathogenic* bacteria. The object of the present paper is to report some experiments which we have made for the purpose of comparing the efficiency, for the purposes of disinfection, of current unconfined saturated steam with that of current unconfined steam which had been superheated by being passed through a series of hot pipes.

I.—THE PHYSICAL PROPERTIES OF SUPERHEATED STEAM.

Steam or water vapour may be said to be *saturated* when no lowering of its temperature or increase of its pressure is possible without condensation. The temperature at which condensation occurs varies and depends upon the quantity of steam present in a given volume—in other words, it depends upon the pressure exerted by the steam. The closer together the molecules of the steam the higher is its pressure and the more readily does it condense. We may therefore say that the greater is the pressure of steam the higher is its condensing point.

Steam whose temperature is above its condensing point for the existing pressure is said to be *superheated*. Its temperature may be lowered or its pressure raised to an extent which is proportional to the degree of superheating without condensation occurring. Consequently it does not readily scald. Of course, a sufficient amount of cooling or of compression will convert superheated into saturated steam.

It is the property of air or other gases when mixed with steam in an unconfined space to separate its molecules and so to diminish its pressure on a given area. The pressure exerted by a mixture of gases is equal to the sum of their individual pressure. Consequently in an unconfined mixture of steam and air the pressure of the steam must be less than that of the atmosphere, for the pressure of the mixture is equal to that of the atmosphere, and some of this pressure is supported by the air. For steam to be saturated at 100° C. it is necessary that its molecules should be close enough together to exert a pressure equal to that of the atmosphere. Consequently steam at 100° C. when mixed with air at that temperature and unconfined cannot possibly be saturated; it is, in fact, superheated. It may, however, become saturated if cooled to a lower temperature or if pressure be increased so as to bring its molecules nearer together. The amount of cooling necessary to bring the steam in such a mixture to the saturation point depends upon the amount of air present. Consequently it follows that the temperature may be lowered below 100° C., and considerably so if a large proportion of air is present, without the steam, or perhaps we should now say water-vapour, becoming saturated. Superheated steam, or at least superheated vapour, therefore does not necessarily have a temperature of over 100° C.

It has been pointed out that the steam in an unconfined mixture of steam and air at 100° C. cannot possibly be saturated. It is probably for this reason that the presence of air in porous articles of clothing, &c., is so important a hindrance to sterilisation. Von Esmarch,[1] by means of experiments made with threads containing anthrax spores, found that superheated steam at atmospheric pressure was greatly inferior as a germicidal agent to saturated steam at 100° C. In the case of bulky articles, such as folded blankets, exposed to superheated steam he found that anthrax spores on the surface might remain alive even during an exposure of 30 minutes. In the interior, however, the case was different; the steam was robbed of its superheat when it penetrated into the blankets and it was then found to have the same sterilising power as saturated steam at 100°. He found that superheated steam penetrated no quicker than did saturated steam.

II.—THE HEAT GENERATED BY THE ABSORPTION OF MOISTURE BY VARIOUS ORGANIC MATERIALS.

It is, of course, well known that paper, cotton, flannel, and such things have an affinity for water. But it is not so generally recognised that the combination of water with these things may be sufficiently energetic to considerably raise their temperature. Dr. R. E. Dudgeon[2] seems to have been the first to point out that abnormally high temperatures (106° F.) might be registered in the mouth by merely wrapping some cotton-wool or the corner of a silk handkerchief round the thermometer bulb, and then forcing the expired air through this material, but he erroneously concluded that these high temperatures were attributable to the temperature of the breath, which he concluded must be higher than that of the mouth. Sir W. Roberts[3] confirmed the observations, but contested the conclusions of Dr. Dudgeon, and attributed the rise of temperature within the thermometer wrappings above that of the breath to the "conversion of latent heat into sensible heat by the rapid condensation of aqueous vapour"; and he showed that the phenomenon was rendered much more marked by previously drying the material used to surround the thermometer bulb. On the other hand, it became less and less marked when the experiment was repeated with the same strip of flannel until on the third attempt the temperature recorded was only 98·6° F. "It is probable," he says, "that with the super-exsiccated flannel the first portions of the aqueous vapour condensed at the beginning of the experiment pass from the gaseous into the solid form and constitute that portion of water which is incorporated in intimate union with all organic tissues." Dr. H. F. Parsons[4] repeated the experiments with the clinical thermometer and showed that the same action took place at a higher temperature by means of the following experiment. "A thermometer," he says, "was wrapped in a few rolls of flannel and was heated in dry air to 220° F. for some time; it was then allowed to cool a little, and as the mercury fell the index was shaken down till it stood at 212° F. The dry roll of flannel was then placed in a tin cylinder and exposed for five minutes to steam at 212° F., at the end of which time the thermometer included was found to register 239° F." Similar experiments to this have recently been made by Max Rubner, Professor of Hygiene in Berlin,[5] who has observed the temperature in the interior of a mass of wool, previously dried and warmed, rise when placed in a current of steam at 100° to 146° C. in 10 minutes, and remain above 140° C. for over an hour.

The experiments with the clinical thermometer are easily verified; cotton, paper, and woollen materials are all effective. When these are thoroughly dried and wrapped round the thermometer bulb we have frequently seen a temperature of 110° F. or more registered in the mouth of a healthy individual within a minute. It is not even necessary to dry these things artificially to register a temperature considerably over that of the mouth; and we have found the thermometer rise to 100° F. or more in the mouth when the bulb has been merely wrapped in a few turns of one's pocket-handkerchief taken direct from one's pocket, and to 102° F. in a strip of linen torn from a towel which had been hanging in the room. It is doubtless in some such way that abnormally high temperatures are occasionally produced in the clinical thermometer by persons feigning to be ill. We have also had no difficulty in obtaining temperatures considerably over 100° C. in the interior of rolls of paper, cotton, or flannel dried, warmed, wrapped round a thermometer bulb, and then placed in a current of steam.

Mr. Winter Blyth[6] considers that the heat which is evolved in the moistening of dry porous substances favours the disinfecting action of steam. But this is not generally true. It is, of course, conceivable that the heat so generated might under certain circumstances raise the temperature no higher than 100° C., in which case it would accelerate the process of disinfection; but whenever the temperature reached is above 100° C., provided that the pressure does not exceed that of the atmosphere, the steam is superheated and its sterilising action is much impaired. Our experiments have shown us that anthrax spores enclosed in the centre of a roll of thoroughly dried flannel or paper exposed to a current of saturated steam for ten minutes and more have not been destroyed, although the internal temperature of the roll has exceeded 120° C.

The following curve (Table I.) shows the rise of temperature inside a roll of flannel exposed to saturated steam at 100° C.

After 10 minutes the roll of flannel enclosing the thermometer bulb was taken out of the steam and allowed to cool. Five minutes later the thread containing spores was taken out from the centre of the roll and put into a tube of broth. A growth of anthrax bacilli on the following day showed that the spores were still living.

We will describe one more experiment of this kind because it illustrates the state of dryness of a hygroscopic substance which, after having being thoroughly dried, has been exposed to saturated steam.

A long strip of grey filter paper was weighed and then thoroughly dried in hot air and weighed again. It was found to have lost 11 per cent. of its weight in the process. It was then rolled tightly round the bulb of a thermometer. In order to prevent the outer portions from becoming unduly wetted during the subsequent exposure to steam the roll was surrounded on all sides with a further quantity of the same kind of paper. The whole was then placed in a copper cylinder, in which steam was being rapidly generated at atmospheric pressure, and there it was allowed to remain for half an hour. After this the outer coverings of paper were removed and the original roll weighed again. The changes in weight were as follows. Before drying the roll weighed 23·9 grammes; after drying it weighed 21·5 grammes, being a loss of 2·4 grammes, or 11 per cent.; and after steaming it weighed 21·8 grammes, being a gain of 0·3 gramme, or 1·5 per cent. The temperature in the centre of the roll rose rapidly above that of the steam and reached a maximum of 132° C. in eight minutes. It remained at this point for five minutes, after which it gradually fell, so that at the end of half an hour's exposure to steam it was 128° C.

When the paper was unrolled after its exposure to steam, and in spite of its having taken up 1·5 per cent. of its weight of water, it felt perfectly dry and even crackled when

[1] Zeitschrift für Hygiene, 1888, pp. 196 and 399.
[2] Nature, 1880, vol. xxii., p. 241, and 1880, vol. xxiii., p. 10.
[3] Ibid., 1880, vol. xxiii., p. 55.
[4] Supplement to the Fourteenth Annual Report, Local Government Reports, 1884.
[5] Hygienische Rundschau, Berlin, 1898 and 1899.
[6] A Manual of Public Health, Macmillan, 1890.

crumpled. Indeed, its weight showed that it had not taken up nearly so much water as it contained originally. We therefore think we are justified in concluding, with Sir William Roberts, that this 1·5 per cent. of its weight of water, which it had taken up in the steaming, had entered into some form of combination with the substance of the paper and had indeed been converted into the solid state, and that the rise of temperature above that of its environment is to be attributed partly, perhaps, to the energy set free in the process of combination, but chiefly to the setting free of the latent heat, both of steam and of water. That the setting free of the latent heat of water accounts for some of the rise of temperature is rendered the more probable by the following experiment. The bulb of a thermometer was wrapped round with a small roll of filter paper dried in hot air and cooled over sulphuric acid. When the thermometer registered the temperature of the room the paper was moistened with a few drops of water at the same temperature, whereupon the mercury rose a few degrees. This rise of temperature above that of its environment, which occurs could be got over by a preliminary sprinkling of the things to be sterilised with water.

In the following experiments, which were made with the object of comparing the sterilising properties of unconfined superheated steam with those of saturated unconfined steam, we made use of an apparatus constructed for another purpose which was kindly placed at our disposal by Mr. H. Higgins of Cambridge, the inventor. It will sufficiently describe the apparatus if we say that steam generated in an ordinary boiler was allowed to pass, either directly or through a superheater composed of a series of heated iron pipes, into a long chamber. The latter was provided with a door at one end and an opening for the escape of steam at the other. The means of escape for the steam were so ample that by no possibility could the pressure inside rise above that outside. The superheater was placed over a gas furnace, so that by controlling the supply of gas and the rate of flow of the steam through the hot pipes it was possible to regulate the temperature of the steam, and we could continually pass into the chamber either saturated steam at 100° C. or steam which

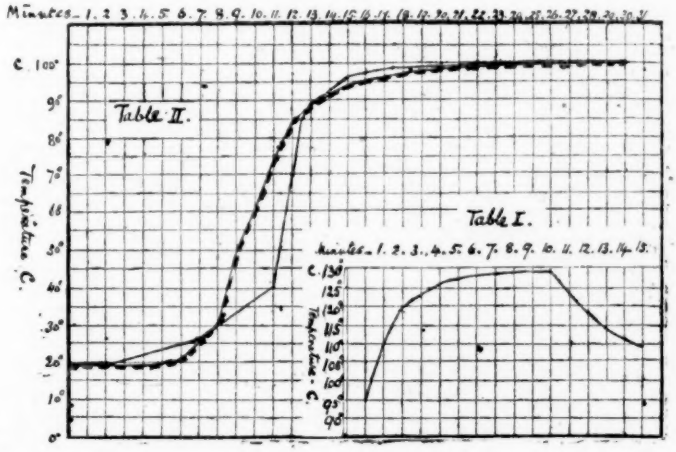

TABLE I. shows the temperature inside a roll of dry flannel exposed to saturated steam at 100° C. The temperature within the chamber was shown by a naked thermometer which projected through the roof of the chamber. When saturated steam was used this thermometer rose in a few minutes to 99° C. or 100° C. and remained there. When the superheated steam was used a temperature of 120° C. was reached in five minutes, 125° C. in 10 minutes, and 127° C. in 15 minutes. After this it slowly rose to 130° C.

TABLE II. shows the rate of penetration of heat into a basket of tightly-packed flock, weighing about five and a quarter pounds, when exposed to a current of saturated steam at 100° C. (continuous line) and to a current of superheated steam at a temperature of from 120° to 130° C. (broken line).

when porous organic substances are placed in steam, does not take place in asbestos which has been heated to redness and cooled over sulphuric acid. It is, therefore, not a purely physical phenomenon, but depends upon some chemical combination of a hygroscopic substance with water. That this combination is a loose one is shown by the ease with which the water is driven off by hot air.

It is clear from the experiments which have just been related that extreme dryness may interfere with the sterilisation of such things as are composed of hygroscopic materials; and it is important to know whether such things are ever naturally dry enough for this to occur.

We have already stated that a temperature considerably above the normal may be registered in the mouth if the thermometer bulb be wrapped up in the corner of one's pocket-handkerchief. But we have not been able to record any temperature above 100° C. in the interior of rolls of flannel, cotton, or paper exposed to saturated steam at this temperature unless these substances had been artificially dried. But it must be added that these experiments were made in the damp atmosphere of an English November, and they therefore by no means show that in places and at times when the air is dryer the affinity of these things for water may not form some practical impediment to rapid sterilisation. But if this should prove to be the case the difficulty had been superheated to any extent desired up to a temperature at which it scorched articles of bedding which were exposed to it.

III.—THE PENETRATING POWER OF SUPERHEATED STEAM AT ATMOSPHERIC PRESSURE COMPARED WITH THAT OF STEAM AT 100° C. INTO BULKY ARTICLES SUCH AS PILLOWS AND MATTRESSES.

In our early experiments we made use of a thermo-indicator containing a piece of fusible metal which caused an electric bell to ring when the temperature reached 95° C. This little apparatus was enclosed in the centre of a pillow which was then placed in the steam chamber and the time required to raise the temperature of the interior of the pillow to 95° C. was noted. We were careful to use in our comparative experiments pillows as nearly identical as possible and more particularly in regard to dryness. In the case of pillows which were used more than once on the same day we dried them until they regained their original weight before commencing the second experiment. We used steam at 100° C. and at various degrees of superheat up to 150° C., and we found that it made no difference to the rate of penetration whether the steam was superheated or not, such small differences as we observed being inconstant and easily explained by the fact that it was impossible to ensure in

two comparative experiments that the thermo-indicator should be surrounded by exactly the same amount of material.

In other experiments we watched the rate of penetration of the steam by means of a long three-foot thermometer, the bulb of which was buried in the middle of a basket of tightly packed flock, while the stem, projecting through the room of the chamber, carried the index to the outside, so that the movements of the mercury could be continuously watched. The stem of the thermometer was enclosed in a larger glass tube containing air, so that it was unlikely that any appreciable quantity of heat reached the bulb by conduction along the stem.

Experiment.—The walls of the chamber were heated to 100° C. by the passage of steam. The basket of flock was carefully weighed, packed with a maximum thermometer, the bulb of the long thermometer just described, and the electric bell fuse in its centre. Together with these was placed a thread containing anthrax spores. On the surface of the flock in the basket was another thread containing anthrax spores and another maximum thermometer. The basket was then put into the chamber, the stem of the long thermometer being put through the hole in the roof. The door was then closed and a good current of saturated steam at 100° C. passed through the chamber. The temperature indicated by the long thermometer was observed from time to time, and after half an hour's exposure the basket was taken out and weighed, the instruments having been removed, and the anthrax threads were placed in tubes of broth. The flock was then turned out of the basket and spread out on the floor. Being hot it rapidly became dry again and when collected and put back in the basket was found to be practically of the same weight and therefore just as dry as at the beginning of the experiment. Having thus assured ourselves that we were starting with the flock in the same condition as before we repeated the experiment, using superheated instead of saturated steam. Table II. shows the results of this experiment.

The rate at which the central portion of the flock was heated was practically the same in both cases, the variations shown in the table being unimportant and being probably due to some variation in the conditions which were not completely under our control. The maximum temperature reached was the same in each case—viz., 100° C. After exposure to saturated steam the basket of flock had gained three and three-quarter ounces, or 4.36 per cent. After exposure to superheated steam it weighed the same as before. In both experiments the anthrax spores exposed on the surface and in the interior of the flock were found to be dead.

It will be observed that in neither case did the temperature in the interior of the flock exceed 100° C., although the temperature of the steam to which the basket was exposed was in one case over 120° C. for 25 minutes, and this is in accordance with all our experiments in some of which considerably higher temperatures have been used and the heating has been continued as long as four hours. We believe the explanation of this curious fact to be as follows. Those substances of which our clothes and bedding are usually composed have, under ordinary conditions, a quantity of water loosely combined in the solid state with their molecules. When superheated steam comes into contact with these substances its superfluous energy is devoted to setting free, liquefying, and evaporating this combined water, and the steam becomes saturated and may be partly condensed in the process. On the other hand, when saturated steam comes into contact with these substances in a very dry state water passes from it to them and energy in the form of heat is liberated.

We may ask, What will happen when superheated steam comes into contact with these things in a very dry state? Each exerts an attraction for water and may be said to be trying to dry the other. The result will depend on the degree of dryness of the organic material and the degree of dryness of the steam. If the material is drying the steam then H_2O will be passing from the gaseous to the solid state and energy in the form of heat will be liberated in the process and the temperature will rise. But if the steam is drying the material then H_2O will be passing from the solid into the gaseous state, energy in the form of heat will be locked up in another form, and the temperature will fall to the condensing point of the steam. In any case the process, whichever it be, will continue until a balance is established between the attraction exerted by the steam and that exerted by the organic substance. As long as any excess of water remains on the side of the organic material the steam cannot remain superheated, for steam in the presence of water cannot have a higher temperature than the boiling point of the latter any more than water in the presence of ice can have a higher temperature than the melting point of ice. Thus, whether we place the pillow or other similar article in superheated or in saturated steam, the conditions within it are exactly the same. The rate of penetration of heat is therefore identical. We should consequently expect to find the sterilising effects identical also.

IV.—THE STERILISING ACTION OF UNCONFINED SUPERHEATED STEAM COMPARED WITH THAT OF SATURATED STEAM AT 100° C.

As already mentioned von Esmarch found that anthrax spores contained on threads suspended in the steam were not so easily destroyed by unconfined superheated steam at temperatures above 100° C. as by saturated steam at this temperature, and, moreover, that superheated steam did not always destroy these micro-organisms when placed on the surface of articles of bedding exposed to it. In the interior of these things they were, however, destroyed equally easily by unconfined steam, whether it was heated to 100° C. or to higher temperatures. Our own experiments confirm these statements. In all our experiments anthrax spores in the interior of baskets of flock or of pillows have been destroyed by exposure to superheated steam, as well as to saturated steam, whenever an inside temperature of over 96° C. has been maintained for 10 minutes. Anthrax spores placed on the surface of the articles exposed to steam were, in all cases but one, killed, both when superheated and saturated steam were sent into the chamber. But it must be pointed out that in practice it is difficult to expose bulky articles at once to superheated steam unless these have been at first warmed and dried, for some amount of condensation is almost certain to take place on their surfaces. And in our experiments with superheated steam it may have been that the spores were destroyed, not by the superheated steam itself, but by the saturated steam in which they were for a short time unintentionally exposed.

The single experiment in which the surface spores were found to be still living was as follows. A smaller current of steam than usual was used and the temperature within the chamber rose rapidly from 92° to 143° C.; but nevertheless we found that an exposure of 50 minutes had not sufficed to destroy the anthrax spores on the surface of the pillow, although those in its interior were dead. It is probable that in this experiment the current of steam was insufficient to drive the air rapidly from the chamber and that consequently the pillow was at no time exposed to saturated steam, for even when the temperature was between 92° and 100° C., if any air remained, the pressure of the steam would never have reached one atmosphere, which is necessary to bring it up to its point of saturation at the higher of these limits.

In other experiments the very resistant spores of a micro-organism which was probably the bacillus subtilis were used. Neither saturated nor superheated steam sufficed to kill them in the interior of a pillow, though the sterilisation was continued for 10 minutes after the temperature inside had reached 96° C. On one occasion the spores on the surface were found dead, but the temperature had then been so high as to scorch the surface of the pillow. In other experiments neither 20 minutes' exposure to saturated steam at 100° C. nor exposure for the same time to superheated steam at from 100° to 108° C. sufficed to destroy them.

From our experiments we feel justified in concluding that the sterilising effect of superheated steam at atmospheric pressure upon the interior of articles of bedding is identical with that of saturated steam at 100° C., but that its action upon living germs upon the surface of these things is inferior. In practice, however, it will generally happen that the surfaces of articles get a preliminary exposure to saturated steam and in a machine like that which we used this can easily be made a matter of certainty by using for the first few minutes a current of saturated steam and continuing with superheated steam for as long a time as is necessary to sterilise the interior. We may therefore conclude that as far as concerns its penetrating power superheated steam is identical with saturated steam and that its sterilising power upon the interior of porous articles of clothing, &c., is the same, and that its inferior sterilising

action upon the surfaces of these things can be easily overcome. It remains to be seen whether it has any advantage in leaving articles exposed to it drier than those exposed to saturated steam at 100° C.

V.—THE DRYING PROPERTIES OF SUPERHEATED STEAM.

Current superheated steam has great drying properties. We have already alluded to the loosely combined water ordinarily present in articles of clothing and bedding and stated that superheated steam is able to drive off this water. Coming into contact with water-holding substances, the superheated steam rapidly transfers its superheat to them and becomes saturated steam. It is probable, too, that if there be much cold water present the superheated steam will even become condensed and the article rendered wetter than before. But, in condensing, the steam will part with its great latent heat and the temperature of any part of the article in question will be thereby quickly raised to 100° C. and when this point is reached the further action of the superheated steam will be to evaporate the water, both that which is held mechanically in the interstices of the substance and that which is loosely combined with the latter. Thus it is that articles submitted to superheated steam may come out lighter than before. The influence of steam in drying or wetting such things as we are considering is best shown by comparing their weight before and after exposure. Table III. gives the results of some of our experiments.

TABLE III.—*Showing the Gain or Loss of Weight of Articles of Flock Exposed to Saturated and Superheated Steam.*

—	Duration of experiment (minutes).	Temperature of steam (degrees centigrade).	Weight. Before. lb. oz.	Weight. After. lb. oz.	Percentage loss or gain.
Saturated steam at 100° C.	19	100	3 9¼	3 11	+ 2·2
	20	100	3 8	3 10½	+ 4·2
	30	100	5 6	5 9¾	+ 4·2
Superheated steam at various temperatures above 100° C.	15	150–160	3 7½	3 6½	- 1·8
	20	170–190	3 6½	3 5¾	- 1·4
	25	120–128	5 5	5 5	0·0
	40	120–143 (mixed with air)	5 4½	4 15	- 6·5
Saturated steam 13 minutes, followed by superheated steam 17 minutes	13	100	3 9	3 9½	+ 0·9
	17	100–144			

These results show that superheated steam may be relied upon to leave articles of bedding exposed to it for a sufficient length of time drier than before, and that the length of time necessary to attain this result is in the case of those articles which ordinarily require sterilisation not inconveniently long.

Note on the anthrax spores used in these experiments.—The anthrax spores were obtained from a culture which killed a mouse in 30 hours. They were scraped off on agar tubes and suspended in sterile salt solution of 7 per cent. Threads of silk and cotton, previously washed in distilled water and sterilised, were then placed in the suspension of spores, taken out and dried over sulphuric acid for 24 hours. Their powers of resisting heat were tested as follows: Threads were placed in a chamber full of steam at 100° C. for one, two, three, and four minutes respectively, then placed in beef broth and incubated at 36° C. In No. 1 alone a growth took place; the others remained sterile. A thread dropped in boiling broth which was rapidly cooled gave a culture. A thread dropped into boiling broth and boiled for half a minute gave a culture. A thread dropped into boiling broth and boiled for two minutes gave a culture which, however, grew very slowly, no growth being apparent until the third day.

BRISTOL ROYAL INFIRMARY.—The committee of this institution recently offered to make 24 beds available for soldiers of the Gloucestershire Regiment invalided from South Africa and requiring active medical or surgical treatment. The War Office has accepted the proposal.

LANGPORT DISTRICT COUNCIL.—At the meeting of the Langport District Council held on Jan. 16th a letter was read from the Somerset County Council asking what steps were being taken to provide an isolation hospital. One of the members stated that there was not so much disease by one half as there was 20 years ago and that "it was the half-crown notification fees that accounted for the number of cases." Eventually the clerk was instructed to inform the county council that an isolation hospital was unnecessary.

SEPTIC LYMPHANGITIS ALONG THE URETERS AFFECTING THE KIDNEYS TREATED WITH ANTI-STREPTOCOCCIC SERUM; RECOVERY.

BY J. W. STENHOUSE, M.B., C.M. EDIN., M.R.C.S. ENG., L.R.C.P. LOND.

ANTI-STREPTOCOCCIC serum is still in the experimental stage. Negative results are numerous and a positive result is therefore of interest. The case about to be recorded was not a hopeful one and as a last resort the serum was tried very much in the nature of an experiment. The coincidence of the combination of quinine in the treatment is perhaps worthy of attention.

A married woman, aged 28 years, gave birth to a child seven years ago and made a very fair recovery. She had a "whitish" discharge for two years when it became "yellow-like matter" and increased to such an extent that it gave her a great deal of discomfort and pain on walking (I may here interpolate that the husband denied ever having had any venereal complaint). This discharge went on for a couple of months when she consulted a gynæcologist who discovered that she had also a urethral discharge which could be expressed on pressure of the anterior vaginal wall. She was treated with astringents to the vagina and urethra and sandal-wood oil internally. She carried on this treatment for above five years, during which time the urethra was additionally treated with numerous drugs, but without any effect. The vaginal discharge was kept in check with the astringents and she could get about with tolerable comfort. About Whitsuntide in 1899 she used protargol for the urethra, and shortly after she had begun to use it she developed cystitis which lasted for a month. The urine, however, never properly cleared. On July 20th she went into a home to have the urethra treated and had Skene's tubules split open and cauterised. On the 26th she began shivering, had a sore throat, and pains in her limbs. She left the nursing home on the following day. As the throat did not improve she sent for me, but as I was away for my holidays Dr. E. G. Yonge kindly saw her. He was of opinion that she was suffering from septic tonsillitis and treated her for five days with iron and quinine internally and carbolic locally.

Bicycling had been recommended to this patient for her uterine condition, so she resumed that amusement about August 17th. On the 20th she went for a run of 29 miles and on her return in the evening she began to shiver and developed another attack of cystitis. She was able to be out of bed on the following day but in the evening she had a rigor with pains in the limbs and in the right side of the abdomen and back followed by sweating. The rigors were very frequent during the night and were repeated during the day. She was now confined to her bed and unable to sit up in it. I was called to see her on the evening of the 22nd. The pulse was 116 and the temperature was 104° F. Her face was pinched and the skin had a dirty greyish look. The abdomen was slightly distended and the muscles on the right side resisted pressure while those on the left were tolerably flaccid. The kidney on the right side was easily palpated; it could be felt to be enlarged and was very tender. A line of tenderness ran along the line of the ureter and on pressing it over the brim of the pelvis it could be felt as a thickened cord and the pressure gave much pain. The urine had a cloud of pus and there was pain at the end of the act of micturition. The cervix uteri was in a condition of ectropion and the uterus was retroflexed. The heart and lungs were normal. I prescribed 10 grains of salol every four hours and a mixture containing boric acid, buchu, hyoscyamus, and uva ursi. The next morning her pulse was 94 and the temperature was 101·8°. During the night she had only modified rigors which produced a sensation of cold followed by one of heat. The right kidney was as tender as on the preceding evening and slightly larger. She kept very much in the same condition all that day and the following, the temperature oscillating between 99·8° and 102°. On the 25th the right kidney was larger; it was close to the abdominal wall and very tender. In the afternoon of this day she commenced to have pain on the left side along the

ureter to the kidney and by the evening the left kidney could be easily palpated and was also tender. Some enlarged glands could be felt about the iliac arteries.

I called Mr. J. Collier to see her in consultation. He confirmed the diagnosis and we thought it had gone on to suppurative nephritis. The prognosis was grave indeed. Mr. Collier suggested that quinine should be tried (five grains every four hours) and urotropine (10 grains three times a day). On the following day the left side was worse and the patient was losing ground. Her face was more earthy-looking and she was rapidly losing flesh and strength, so much so that she could hardly move in bed, apart altogether from the pain which any movements caused her. As the prognosis was so bad I thought that the serum treatment held out a ray of hope and in any case if it did no good it could not make her worse than she was, so, with Mr. Collier's approval, I determined to make a trial of it. I therefore stopped the quinine and injected into the left flank about 20 cubic centimetres of serum. This injection and the subsequent three were made with all antiseptic precautions, the syringe being boiled and the hands and skin being thoroughly washed and carbolised. The next morning the pulse and temperature had both fallen, the former from 96 to 80 and the latter from 102·2° to 98·2°. This was encouraging. The serum had modified the pulse and temperature more than the drugs. In the evening there was a rise in the pulse to 90 and in the temperature to 101·2°, so I injected 10 cubic centimetres of serum into the right lumbar region. Instead, however, of getting the expected fall next morning the pulse and temperature had both risen, the pulse to 100 and the temperature to 103°, and at 8 P.M. the pulse had further risen to 108 and the temperature to 102·4°. I resumed the quinine every four hours and injected 20 cubic centimetres of serum into the left lumbar region. On the 29th, at 8 A.M., the pulse was 84 and the temperature was 99·8°; at 4 P.M. the pulse was 84 and the temperature was 101°; and at 8 P.M. the pulse was 84 and the temperature was 99·4°. 20 cubic centimetres of serum were injected into the right flank. On the 30th the pulse was 68 and the temperature was 98°, and it remained normal all day. The patient was feeling better and the pains were diminished. On the 31st there was a slight rise of the pulse (to 80) and of the temperature (to 99·8°). On examination I found the left pupil slightly smaller than the right and somewhat oval in shape. She had no headache, but said there was "a slight mist over the left eye." Percussion of the abdomen showed the spleen to be normal in size. The enlargement of the right kidney was diminished, the tenderness was less, the ureters were not so tender, and no glands could be palpated. On Sept. 1st there was a slight rise of temperature from normal to 99·2°. The left pupil was slightly irregular, the iris was retracted at the upper and inner quadrant, and both kidneys and ureters were less tender. At the seat of injections on the right and left sides there were two extensive patches of erythema which gave the patient great discomfort, especially at night, when it rose up in wheals like urticaria. The intolerable itching was most difficult to control; but what gave most relief, after trying various remedies, was an ointment containing hydrocyanic acid, carbolic, and chloroform in lanoline. On the 2nd the pulse was 60 and the temperature was 97·4°. On the 3rd the right kidney was much smaller and the abdomen could be more freely palpated without giving much pain. The pupils were normal. The urine was much better but there still remained the urethral discharge. On the 6th I dilated the urethra with Hagar's dilators till I could get my small finger into it but could feel nothing abnormal, either cicatrices or pouching. The dilatation did good, however, as the discharge from Skene's tubules on one side dried up, while that on the other became serous. The temperature and pulse remained normal during the week until the 11th, when there was a slight rise of the pulse to 82 and of the temperature to 99·2°. Coincident with the rise there was pain in the left leg; the glands in the groin, which had previously been slightly enlarged, were now tender on pressure; there was pain along the line of the femoral artery; the veins in the calf of the leg were enlarged and cord-like; and there was slight œdema of the leg and foot. The thrombosis was treated with elevation of the limb and lead and opium fomentations and the glands with iodine ointment and carbolic compresses, and the condition had practically disappeared by the 20th. The patient felt perfectly well and had put on flesh. The foot required to be bandaged as it became slightly swollen with use. The urethral discharge remained. Five months after the patient stated that she had not felt better for years.

Remarks by Mr. J. COLLIER.—On examination of this patient I came to the diagnosis mentioned by Dr. Stenhouse above, mainly from the thickened condition of the ureters. The prognosis seemed to be the very gravest, for the general condition was so extremely bad as to make it appear certain that the kidneys were riddled with small abscesses. The further history of the case after it was seen by me points sufficiently to the general pyæmic state. Dr. Stenhouse and I agreed at once as an alternative treatment to inject the anti-streptococcic serum, and this was done with a surprising and most satisfactory result. Since the above case in two equally desperate cases—one an adult and the other a child who was apparently dying at the Pendlebury Children's Hospital from acute general pyæmia—I have been delighted with the result of the administration of full doses of quinine associated with repeated serum injections.

Manchester.

THE TREATMENT OF IMPERFORATE RECTUM: AN ANALYSIS OF TEN CASES, IN NINE OF WHICH COLOTOMY WAS PERFORMED.[1]

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DURING the last few years I have operated upon 10 cases of imperforate rectum. The series is unusual in length and some of the cases present special points of interest. I am much indebted to the honorary surgical staff of the Manchester Royal Infirmary, where the majority of the cases were seen, for permission to record them.

The accompanying table gives a brief account of the cases. The last case on the list does not illustrate any of the points to which I wish to call attention and I leave it out of consideration altogether. Three of the children were sent home to their mothers immediately after operation. Two of these are alive; the other died five days later and no post-mortem examination could be obtained. The other six died in hospital and were all carefully examined after death.

Operation.—The two considerations influencing the choice of operation were: (1) the size of the pelvic outlet; and (2) the general condition of the child. In no single instance was any bulging of the perineum during crying made out. One case had been unsuccessfully explored with the trocar before I saw it. In three others an attempt was made without success to find the gut by the perineum after a resection of the coccyx. In the other five immediate colotomy was performed on the left side. The incision was made an inch below and internal to the anterior superior spine. The small gut presented in five cases, the cæcum in three cases, and the sigmoid in one case. In this and one other case only was distension of the sigmoid and rectum at all marked. There was considerable difficulty in bringing the gut up to the level of the abdominal wall in all of the six cases in which the cæcum did not present. This was apparently due to the great distension of the small gut and the cæcum and not to any shortness of mesentery. In eight cases the gut was simply fixed to the muscle and fascia by sutures passed through its outer coats. It was then opened and further fixed by four sutures transfixing the whole thickness of the gut wall and including the skin. The difficulty in bringing the loop well up out of the abdominal cavity prevented the application of any supporting mesenteric suture except in one case. In this an attempt was made to fix the gut according to a plan which I have found very successful in the adult and which I hope shortly to record. This was with a view to lessening the great tendency to prolapse in these cases. The child, however, suffered from congenital heart disease, which was most embarrassing during the operation and led to death on the third day. This tendency to prolapse has been observed in nearly all recorded cases of recovery after colotomy and was quite marked in both of my cases. It is a necessary result of the difficulty in bringing up the sigmoid loop and the consequent inability

[1] A paper read before a meeting of the Manchester Medical Society on May 5th, 1899.

SYNOPSIS OF TEN CASES OF OPERATION FOR IMPERFORATE RECTUM.

No.	Sex.	Age.	Operation.	Result.	Remarks.
1	M.	Three days.	Immediate colotomy.	Death on fourth day.	There was no proctodæum. Exploration by trocar had been performed before the case was seen. Necropsy.—The whole rectum was replaced by a fibrous cord four inches long passing to the prostate and the base of the bladder. There was much old hæmorrhage in the pelvis.
2	M.	Four days.	Immediate colotomy.	Alive, age 13 months.	There was no proctodæum. The patient was sent home immediately after operation.
3	F.	Three days.	Immediate colotomy.	Alive, age two years.	The proctodæum was half an inch deep. The patient was sent home after operation.
4	M.	Three days.	Colotomy after perineal exploration.	Death in five days.	There was no proctodæum. The cæcum presented much distended and discoloured, and was opened. The sigmoid could not be found on the left side. The patient was sent home to the parents. No necropsy was held.
5	M.	Two days.	Immediate colotomy.	Death in three days.	No proctodæum was present. Necropsy.—The pouch descended to three-quarters of an inch of the skin. There were patent auricular and ventricular septa.
6	M.	Five days.	Immediate colotomy.	Death in seven days.	The proctodæum was half an inch deep. The cæcum presented and was opened. Necropsy.—The sigmoid loop passed over to the right iliac fossa.
7	F.	Two days.	Colotomy after perineal exploration.	Death in three days.	The proctodæum was half an inch deep. Necropsy.—The gut three-quarters of an inch above the proctodæum was attached to the upper end of the vagina.
8	M.	Three days	Colotomy after perineal exploration.	Death in 17 days.	There was no proctodæum. Prolapse of the small gut through the abdominal wound occurred on the twelfth day. Necropsy.—The gut one inch from the skin was fixed to the prostate and the base of the bladder.
9	M.	Two days.	Immediate colotomy.	Death in three days.	There was no proctodæum; the sigmoid and rectum were distended. Necropsy.—The gut was three-quarters of an inch from the skin.
10	F.	One month.	Perineal dissection and plastic operation.	Alive, age six months.	The rectum was imperforate; there was a small gradually-closing recto-vaginal fistula. The rectum was opened at the perineum and the fistula was closed.

to pass a supporting suture through the mesentery. However, with a well-applied pad the inconvenience did not seem great. One further point requires notice, which is that the tendency to peritoneal repair in these small children does not seem great. One lived seven days and another 17 days, yet it was found at the post-mortem examination that the line of union fixing the gut was in each case very thin. In one case the sutures gave way on the twelfth day and some inches of small intestine prolapsed. The coils were cleaned and reduced and the child lived five days longer, yet there was no sign of any adhesion in these coils after death. The suture of the gut to the abdominal wall ought to be especially carefully performed.

Pathology.—Six of the cases were carefully examined at the necropsy with a view to proving the ease or otherwise of the perineal operation. Allowance need not be made for any distension of the blind end, for in only two of the whole number of cases was distension of the sigmoid and rectal pouch at all marked. In one case the rectum was entirely wanting, a fibrous cord four inches long descending from the termination of the bowel in the iliac fossa to be attached below to the base of the bladder. In three cases there was no proctodæum. The pouch descended to distances of one inch, three-quarters of an inch, and three-quarters of an inch respectively from the skin and ended in a thick mass of fibrous tissue connected with the prostate and the base of the bladder. In two of these cases the pelvis was very narrow, both laterally and antero-posteriorly, and a resection of the coccyx would hardly have given sufficient room for the successful opening of the gut at the perineum. In the other an attempt had been made to find the blind end after a resection of the coccyx. The pelvic outlet was comparatively large, but the exploration had been confined, as we are advised it should be, to the concavity of the sacrum, and the pouch, which was one inch from the surface, was passed by. In two other cases there was an anal cul-de-sac of over half an inch in length, the gut cavity ending half an inch and three-quarters of an inch respectively above this. In one of these the perineal operation had been tried. The pelvic outlet in each case was very narrow; in one the blind end was far forward, fixed to the upper end of the vagina and cervix, and in the other it was fixed to the region of the prostate.

Abnormal position of the sigmoid flexure.—In two cases (Case 4 and Case 6) the sigmoid could not be found in its normal position. The cæcum presented itself much distended and was opened in the left groin. In Case 4 the flexure, hardly distended, could be felt passing over to the right side above the pelvic brim. The child was sent home and no post-mortem examination could be obtained. In Case 6 a similar condition of the parts existed and at the necropsy the flexure was found in the right iliac fossa. These children lived five and seven days respectively with their cæcal openings. These two cases illustrate Huguier's[3] suggestion that in cases of imperforate rectum it is better to look for and to open the sigmoid in the right groin. Giraldés[3] found the sigmoid on the right side 20 times in 134 cases and quotes Bourcart as having found it 30 times in 150 cases of newly-born children. Including the nine cases above mentioned I have examined the bodies of 20 newly-born infants for this abnormality. In six of these it is possible that the sigmoid might have been missed in the operation of left inguinal colotomy. This includes my two cases in which it certainly was missed. These two cases are interesting in another way, for they point to one of the causes of failure after the rectum has been found and opened at the perineum. In Case 6, where the patient was five days old at the time of operation, the cæcum was extremely congested and distended and so twisted on its mesenteric axis as to give rise to a volvulus. The acute obstruction was certainly at that point and not at the rectal imperforation, for the sigmoid was almost undistended. In Case 4 the condition was similar but not so acute. The right course in each seemed to be the relief of symptoms of acute obstruction by opening the cæcum.

Conclusions.—Before deciding on the relative merits and demerits of the perineal and iliac operations they must be considered: (1) as urgent operations for acute obstruction; and (2) as methods of permanent relief. The careful analysis of these cases points to certain limitations in the perineal operation from a life-saving point of view. In Curling's[4] tables out of 57 cases of the type we are now considering the gut was not found on perineal exploration in 23. Owen[5] did not find it in four cases out of five. Excluding the two cases of recovery and the one death in which no post-mortem examination was obtained, of the six cases carefully examined I could only have been reasonably sure of finding the gut in two. These feeble children are in no sense the proper subjects for prolonged operation. Further, as two of the cases seem to show, the acute obstruction is often in the cæcum and will have a better chance of relief if treated by the abdominal route. The fact that there is considerable difficulty in the finding of the gut and a possible

[3] Bulletin de l'Académie Impériale de Médecine, tome xxiv., 1858-1859.

[3] Leçons Cliniques, p. 121.

[4] Transactions of the Royal Medical and Chirurgical Society, vol. xliii.

[5] Harveian Lectures, 1879.

chance that an opening in it at the perineum may not relieve the obstruction is decided evidence in favour of routine colotomy in these cases.

The operations may be compared as methods of permanent relief. We hear much of the terrible condition of the individual with an acting anus in the groin; but it must be remembered that the alternative is not a controllable anus near its normal situation. I should be inclined to say that an inguinal anus is more comfortable and more easily attended to than a perineal anus. Further, the majority of children who recover from the perineal operation need almost constant attention to prevent stricture of the new passage. In Curling's tables out of 26 cases in which there was no proctodæum (the worst form) five lived long enough to be called cures, but the author could only call one a real success. All the others suffered from more or less pronounced stricture-incontinence. Of 31 cases with a proctodæum 10 were called successful, but many were mild cases with a mere membranous diaphragm between the two parts of the bowel. A case reported by Walford[6] is much to the point. The patient died at the age of 17 years from ulceration and perforation of the sigmoid above a perineal anus made a few days after birth. Owen in two cases tried some time after colotomy to make a perineal anus by cutting down upon a sound passed through the colotomy wound. Both children died, but Maylard[7] and Goëde[8] have recorded successes. We are probably justified in saying that if more than half an inch separates the rectal pouch from the surface a perineal anus will be a continual source of trouble. Even viewed in the light of the series collected by Curling, Cripps, and Anders the evidence of my cases seems to support the argument that on most accounts immediate colotomy is the preferable operation.

Manchester.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

BIRMINGHAM GENERAL HOSPITAL.

A CASE OF FIBRO-MYOMA OF THE UTERUS; LEFT HYDROSALPINX; CARDIAC DILATATION AND DEGENERATION; TOTAL ABDOMINAL HYSTERECTOMY; DEATH ON THE TENTH DAY FROM PERFORATION OF A LATENT DUODENAL ULCER.

(Under the care of Dr. THOMAS WILSON.)

THE serious influence exerted by abdominal tumours on the heart is often overlooked. Hofmeier in 1884 collected 18 cases of tumour of the abdomen in which sudden death occurred from heart-failure, and in all of these there was degeneration of the heart fibre. Penrose[1] attributes the change in the cardiac tissue to the increased blood-pressure which is always present in abdominal tumours. This serious effect is an additional argument in favour of early operation in these cases. The perforation of the duodenal ulcer in Dr. Wilson's case was an unfortunate accident which no care could have guarded against.

A thin, spare widow, aged 42 years, was first seen on Dec. 14th, 1897, when she complained that for six months there had been pain in the right lower abdomen and discharge from the vagina. She had had one child 22 years before and no other pregnancies; her husband had been dead for 16 months. A firm multi-nodular fibroid of the uterus of the size of a fœtal head occupied the hypogastric region and extended to within two inches of the umbilicus. The catamenial periods began at the age of 15 years, had occurred regularly once a month, lasting a week, and had been preceded for a day and accompanied during the whole of the flow by a dull, aching sacral pain. The beginning of the present illness was marked by a profuse period lasting 14 days and confining the patient to bed, and for the past six months the periods had been very irregular, usually recurring about every three weeks, with varying but not on the whole increased flow. For the same time there had also been yellow discharge, clearer in appearance and more profuse just before the periods.

On Oct. 25th, 1898, the patient was rather thinner and paler than before and the fibroid appeared to be of about the same size. There had been no menorrhagia, but the yellow discharge had been profuse and the pain severe. The cardiac impulse was much diffused over an area extending to three-quarters of an inch outside the left nipple line and to about one and a half inches below it; the impulse was forcible and deliberate but not distinctly heaving. A soft systolic murmur was heard all over the cardiac area, best at the lower end of the sternum and at the base, especially over the aortic cartilage. There had been palpitation and shortness of breath for about two years; previously the woman had been quite well and she had never had rheumatic fever.

In April, 1899, the patient was obviously losing ground and had become rather thinner and distinctly more anæmic. Paroxysmal stabbing pains, not constant and better in bed, were felt in the lower part of the back and in the lower abdomen, especially in the right inguinal region. The pains doubled the woman up and were sometimes followed by vomiting. The periodic losses and the discharge continued to be about the same; the fibroid had apparently somewhat increased in size; the cardiac signs were more marked, the impulse being now more diffused and extending to one inch outside the nipple, and being also distinctly less forcible and more slapping in character. For about two months there had been occasional nausea and on a few occasions actual vomiting after food. The patient was admitted to the General Hospital on April 22nd, 1899, and on the 25th the tumour was removed by total abdominal hysterectomy.

The usual median lower abdominal incision was made. Much difficulty was experienced in delivering the tumour because of numerous firm membranous adhesions between its posterior surface and the front of the rectum and sigmoid flexure; some of these adhesions required to be divided by the knife and scissors. The left tube was closed and distended with clear fluid, some of which escaped into the peritoneal cavity. The peritoneum was exceedingly thin; the omentum, fine and transparent, with almost no fat, was torn a little, and a considerable portion was removed at the end of the operation. After the tumour was delivered the left ovario-pelvic ligament and the left round ligament were successively tied and divided between pairs of fine silk ligatures; the upper part of the right broad ligament was treated in the same way; the bladder was then stripped down and the vagina was opened into the anterior fornix. The uterine vessels on each side were now secured and the tumour was cut away. One or two small bleeding points were secured with thin silk; the peritoneum was then sponged out and a strip of gauze was pulled down from above into the vagina and left with its upper end in Douglas's pouch; finally, the abdominal wound was closed with deep silkworm gut sutures. During the operation the patient became much collapsed and received twice four minims of strychnine solution by hypodermic injection, saline infusion under the skin of the axilla, and finally intravenous transfusion of saline fluid.

The tumour removed weighed 2 lb. 3 oz. and consisted of the uterus with numerous fibroids affecting its body and of both sets of appendages. After being hardened in formalin it measured 13·5 centimetres in length, 11 centimetres in width, and eight centimetres in the antero-posterior direction. The cavity of the body measured five centimetres and was distended by a submucous fibroid growing from the fundus and measuring 4·5 by 3·75 centimetres. In the fundus and anterior wall were numerous interstitial fibroids measuring from three centimetres to 0·5 centimetre in diameter, and there were also many small subperitoneal fibroids. On the median section about 10 tumours were cut through and showed the usual whorled appearance and bright silvery sheen. The cervical canal measured 3·5 centimetres and the cervix was free and normal. There were numerous old adhesions about the tubes and ovaries, especially on the left side. The left ovary was much enlarged; the right ovary contained a distinct Graafian cyst, the diameter of which was larger than the rest of the organ, and a recent corpus luteum at the outer end. The left tube

[6] Brit. Med. Jour., vol. ii., 1897.
[7] Glasgow Medical Journal, 1896, vol. xlv., No. 2.
[8] Quoted by Cripps in St. Bartholomew's Hospital Reports, vol. xviii.
[1] University of Pennsylvania Medical Magazine, January, 1896.

had been distended with clear watery fluid, and its peritoneal ostium was closed with withdrawal of its fimbriæ into the lumen. The right tube was shortened and on section showed an empty, small, and extremely tortuous lumen; the walls were not thickened; the folds were distinct and not thickened; the fimbriæ were covered by a thin membranous layer continuous with the peritoneal and muscular coats of the tube.

Two hours after the end of the operation the patient had a fair radial pulse of 100 and in seven hours she was looking well and had a good pulse of 108. There was vomiting several times the last four hours after the operation: urine was passed naturally seven hours and flatus 18 hours after the operation. Hypodermic injections of strychnia solution and saline enemata were ordered and gradually left off as the patient improved. On May 1st it was noted that the apex beat was in the fifth space in the vertical nipple line; the systolic murmur was softer in character, but was still heard all over the cardiac area. The condition of the patient gave rise to no anxiety until the ninth day after the operation; on the morning of that day at Dr. Wilson's visit the woman was looking well. In the afternoon of the same day she did not appear to the ward-sister to be quite so well; a dose of castor-oil at 8 P.M. was followed by severe pain in the epigastrium which was promptly relieved by hot fomentations; pain became very severe afterwards in the lower abdomen, especially on the right side of the wound. The pulse began to run up and in the course of the night increased from 120 to 156 beats to the minute. On the next morning (May 4th) Dr. Wilson was called to the patient at 5 A.M. and found her in a state of collapse and complaining of pain in the lower abdomen; the pulse was 156 and the respirations were 36 to the minute. The limbs were becoming cold and there was profuse perspiration all over the body. There had been no vomiting and there was no distension of the abdomen. The wound was perfectly healed and the packing which had been removed from the vagina was sweet and merely moist. In spite of the free use of stimulants the patient rapidly sank and died at midday, 16 hours after beginning to be ill.

Necropsy.—A post-mortem examination was made at 11 A.M. on May 5th by Dr. Stuart Macdonald, to whom Dr. Wilson is indebted for the following notes. The abdomen was a little prominent. The operation wound was firm, dry, and healthy; after opening the abdomen the wound was found to be free from adhesions and there were no stitch abscesses. On opening the abdomen some gas escaped from the peritoneal cavity and there was a distinct gastric odour. There was general suppurative peritonitis, most marked in the upper abdomen; some sour-smelling fluid, milk curd, and partly digested bread were found free in the peritoneal cavity. The omentum was covered with flabby lymph and was adherent to the right pelvic brim. The stomach was contracted and there were large tracts of fine recent adhesions over both its surfaces, as well as over both the upper and lower surfaces of the liver. On raising the stomach fluid was seen to escape from a perforation of about the size of a sixpenny piece on the posterior wall of the first part of the duodenum about half an inch beyond the pylorus. The ulcer had rather thickened smooth edges and appeared to have been adherent to the head of the pancreas. There was no other ulcer in the alimentary tract and there was no post-mortem digestion of the stomach wall.

The vermiform appendix was adherent by plastic lymph to the upper part of the stump of the right broad ligament. The uterus and its appendages had been entirely removed. There was a little extravasated blood in the stump of each broad ligament, rather more on the left side, but the operation wound looked perfectly healthy and there was free drainage per vaginam. The broad ligaments were adherent by plastic lymph to the surrounding parts; a small amount of flaky fluid was present in Douglas's pouch, but there was no free blood. The liver was extremely fatty; the pancreas and spleen were healthy. The kidneys both showed fatty degeneration and in the right kidney were numerous small cysts in the cortex, medulla, and pyramids; the capsule, however, stripped easily and the cortex was not markedly diminished. There was œdema of the upper lobe of each lung and some passive congestion of both bases was observed.

The pericardium contained about two drachms of clear fluid; there was a fair amount of pericardial fat; no adhesions were present. The right auricular appendix contained some small ante-mortem clots; the left was two inches long and had a very small lumen in three-quarters of its extent. There was a little atheroma of the aorta with some thickening of the cusps of the valve, and small patches of atheroma surrounded the orifices of both coronary arteries. The openings of both the coronary arteries were rather patulous, the right being especially so, and the latter was somewhat dilated throughout, but showed no atheroma. The aortic valve was competent; the cone diameter measured 0·9 inch. The pulmonary valve was competent, the cusps were healthy, and the diameter was 1·5 inches. The mitral valve measured 1·28 inches; it showed evidence of slight chronic endocarditis at the base of the anterior cusps. The margins of both the cusps were slightly nodular and there were no vegetations. The tricuspid valve, similar in appearance to the mitral, measured 1·4 inches in diameter. The heart-muscle was soft and flabby and was uniformly brown in colour, with a somewhat hyaline appearance. There was no obvious fatty degeneration. The left ventricle was three and a quarter inches long and the right was four and a quarter inches. The wall of the left ventricle was 1·4 centimetres in thickness all over; that of the left auricle was 0·6 centimetre; that of the right ventricle was 0·85 centimetre and of the right auricle 0·5 centimetre. Under the microscope the heart muscle showed some brown atrophy with slight fatty degeneration of the fibres. The organ weighed nine and a quarter ounces and contained extensive post-mortem clots in all the cavities, with a few ante-mortem clots in the right ventricle.

Films from the peritoneal exudation showed great numbers of micro-organisms of various kinds: large bacilli, small bacilli resembling bacterium coli, diplococci, streptococci, and a few staphylococci. Cultures were rapidly overrun with growth and the organisms were not differentiated.

Remarks by Dr. WILSON.—The above case is worthy of being placed on record for two reasons—in the first place because of its sudden and unexpected catastrophe and in the second because of the serious heart disease which was present in a patient suffering from fibro-myoma of the uterus. Sudden rupture of a latent intestinal ulcer in the course of convalescence from a severe operation on the uterus forms a rare but not unique coincidence, at least two examples having been previously recorded. Professor A. R. Simpson[2] is stated to have shown the specimens from a case of perforation of a duodenal ulcer following myomectomy; and Dr. Harris,[3] speaking of deaths from Cæsarean section, &c., says: "Even peritonitis has been found on autopsy to be entirely independent of the operation or the parturient state; as, for example, where it was produced by a perforating ulcer of the intestines, cicatrices of previous ulcers being found, as in the third case of Professor Chiara of Florence, Italy, operated upon Jan. 5th, 1888."

In such a case as the above it is of course easy to be wise after the event, and on looking back upon its history several symptoms are found noted which may possibly have been due, wholly or in part, to the presence of a duodenal ulcer. Such symptoms are the nausea and vomiting after food which occasionally occurred in the last two months of life, and to some extent also the wasting and anæmia which had progressed very rapidly in the same time. None of these symptoms were very obtrusive and most of them had been gradually progressive, while the pains complained of continued to the last to be experienced in the same positions as those which had so long tormented the woman—namely, in the sacral region and in the lower abdomen, especially on the left side. The whole of the very serious and progressive change in the patient's condition appeared fairly to be explained by the presence of the fibroid tumour of the uterus and by the accompanying heart disease.

The second point of interest is one of the highest importance and raises the question of the relation between the affection of the cardiac walls and the growth of fibro-myomata of the uterus. The relation is in my opinion one of causation, the dilatation and degeneration of the heart having been in some way set up by the growth of the uterine tumours. The frequency of serious heart affections in cases of fibroids is in my experience considerable and calls for more consideration than it has hitherto received. A fibroid may give rise to heart affection by reason of the anæmia which is often present or in a more direct but less easily understood manner by setting up hypertrophy that only later leads to dilatation

[2] Transactions of the Edinburgh Obstetrical Society, vol. xix.
[3] American System of Gynæcology and Obstetrics, vol. ix., p. 262.

and degeneration. A somewhat analogous relation to the latter may be found in the hypertrophic dilatation of the heart that arises during pregnancy, but there is the important distinction that the causing condition in this latter case is of definite duration, whereas in the case of the fibroid the duration is indefinite. The question of the connexion between the affection of the heart and that of the uterus has an important bearing upon the treatment of the latter. If the affection of the heart in any case appears to have arisen as a consequence of the growth of the uterine tumour, and if it is progressive in spite of medical treatment, the condition of the heart becomes an urgent indication for the removal of the tumour by operation.

PENRHYN QUARRY HOSPITAL, BETHESDA.

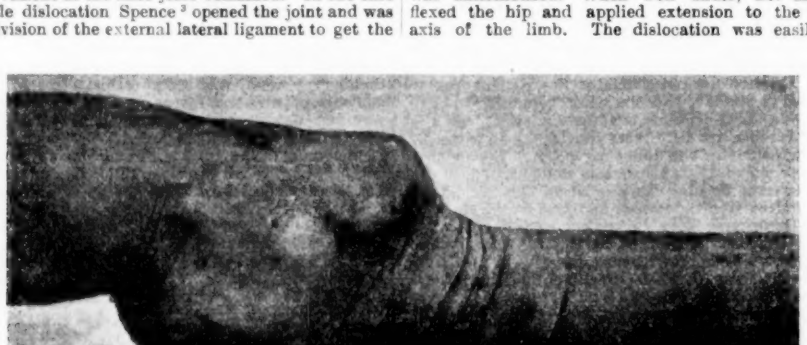
A CASE OF DISLOCATION OF THE HEAD OF THE TIBIA BACKWARDS, UPWARDS, AND INWARDS, AND OF THE PATELLA UPWARDS AND OUTWARDS.

(Under the care of DR. E. A. MILLS-ROBERTS.)

THERE are few dislocations which are more rare than those of the knee. The ligaments of the joint are so numerous and so strong that a fracture is much more likely to occur than a dislocation. In the dislocation upwards and backwards of the tibia the posterior ligament, and at least the posterior crucial ligament, must be ruptured. The popliteal vessels are very likely to be compressed by the displaced tibia or they may be torn completely across. Reduction is usually easy, but cases have been reported by Bagnall-Oakeley[1] and by Karewski,[2] in which, although reduction was not effected, very fair movement at the knee-joint remained. In one case of irreducible dislocation Spence[3] opened the joint and was able after division of the external lateral ligament to get the bones into position, a useful limb remaining. Dr. Mills-Roberts's case is remarkable for the great amount of displacement and for the very satisfactory movement which resulted.

A man, aged 55 years, was admitted into the Penrhyn Quarry Hospital on May 24th, 1898. On examination he was found to be suffering from a complete dislocation of the right leg backwards, upwards, and inwards, the patella being displaced outwards and upwards. (The illustration gives a very good idea of the appearance of the limb on admission.) There was a severe laceration of the skin about the middle of the leg, on the inner aspect. The left shoulder, back, left thorax, and left thigh were badly bruised; on the next day these parts were severely ecchymosed. His left thumb was also lacerated. The patient gave the following history. He was employed at his usual work of a "slate miner" at the Penrhyn Slate Quarries, working on the "face" of the rock between two galleries, the distance between the galleries being 54 feet. Having fastened himself to the usual rope he was removing some loose slate from the "face" of the rock about nine feet below the surface of the upper gallery. He would thus be fastened to a rope nine feet in length and his position would be much of the nature of a pendulum. While thus employed some loose débris "ran" and struck him on the left side and back, swinging him free of the rock. On his return he was again struck on the left shoulder and again swung free of the rock. On his second return his foot and leg caught between two stones; at the same time more débris came down and struck him on the back and shoulder, on this occasion jerking, as it were, the body free of the leg that was caught and giving rise to the above condition. The appearance of the boot and leg verified the history of the accident. On admission the limb was found to be extended with an appearance of being bent forwards (*vide* illustration). The skin about the injured parts was perfectly normal in appearance, there being no sign of any abrasion or injury of any kind. It was tensely stretched over the condylar end of the femur, the whole of the articular surface being quite distinct. The absence of the patella from its normal position was perfectly evident to the naked eye. The rounded shape of the external condyle was very distinct, the internal condyle being less so. The skin below the lower end of the femur appeared in well-marked folds and wrinkles (*vide* illustration). On the inner aspect of the leg, about the middle and to the inside, there was a laceration (with a deep puncture) about two inches long. The foot was everted. About four inches above and behind the condyles on the posterior aspect of the thigh was a well-marked swelling in which the head of the tibia could be made out (*vide* illustration). The patella was easily recognised displaced outwards and upwards.

With the assistance of Mr. Pritchard Roberts the patient was anæsthetised. When well under, Dr. Mills-Roberts flexed the hip and applied extension to the leg in the axis of the limb. The dislocation was easily reduced.



Reproduction of a photograph of a sketch of the leg.

After reduction the sensation of holding the leg was as if the knee-joint was a mass of flabby jelly, a feeling never to be forgotten. There was a little difficulty in reducing the patella, the first attempt at tilting being a failure; however, it readily and easily went over on the second attempt. Dr. Mills-Roberts put him up on a long posterior splint, applying evaporating lotions for three weeks. On May 25th there was a good deal of swelling, but it was rapidly amenable to treatment. On June 15th Dr. Mills-Roberts felt justified in removing the splint and in beginning passive movements and massage. This treatment was continued till July 6th. The movements were done with the greatest care and gentleness, and on the least sign of inflammation were discontinued for a day or two. On July 6th the patient had full flexion and extension and was dismissed with a very good limb. He wears an Arnold's knee apparatus and is able to follow his usual employment of a slate-miner without any inconvenience to the present date (Jan. 15th, 1900).

Remarks by Dr. MILLS-ROBERTS.—The patient on admission was emaciated and badly nourished. He had been for years a sufferer from chronic dyspepsia and had a bad tuberculous family history. His temperature during the time that he was

[1] THE LANCET, Jan. 14th, 1882, p. 53.
[2] Archiv für Klinische Chirurgie, 1886, vol. xxxiii., p. 525.
[3] THE LANCET, Oct. 14th, 1876, p. 534.

in hospital ranged from 99·4° to 99·8° F. with one exception. On May 28th he complained of severe pain in his side. The morning temperature was 102·8° and the evening temperature was 103·4°. His breathing during the whole of this day until about 5 A.M. on the 29th had a distinct Cheyne-Stokes character. On the night of the 28th he had severe diaphoresis. By 8 A.M. on the 28th his breathing had become normal and the pain had disappeared. This condition was in all probability due to the injuries his body had received from the different falls of débris. Taking his tuberculous history into account I felt greatly tempted to give him a stiff knee, but the inflammatory condition of the knee was so amenable to treatment that I decided to try passive movements and massage and to give him a moveable knee.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

Primary Resection of Gangrenous Intestine.—Primary Abdominal Section for Wounds of the Abdomen.

A MEETING of this society was held on Jan. 26th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

The PRESIDENT referred in graceful terms to the loss which the society had sustained by the death of Sir James Paget who had been not only an honorary member of the society but was the first surgeon to occupy the presidential chair.

Mr. JONATHAN HUTCHINSON, jun., read a paper on Resection of Gangrenous Intestine in Cases of Hernia based on a comparison of 42 cases. He related two cases of successful primary resection of small intestine during herniotomy, both operations being performed by simple enterorraphy without mechanical aids. One case was that of a woman with a strangulated femoral hernia on whom he had operated in 1893, removing five inches of damaged gut; she was in good health six years later. The second case was that of a man with strangulated inguinal hernia in which it was necessary to excise ten inches of intestine; this was done by Maunsell's method—that is, one in which an artificial intussusception was made. The patient made a perfect recovery, but died three years later from ulcerative colitis, and the specimen was fortunately obtained for Mr. Hutchinson by Mr. H. L. Barnard. It was shown at the meeting and proved that there had not been the slightest narrowing at the site of the resection. Mr. Hutchinson remarked that it was probably the general impression that the use of Murphy's button had rendered resection of intestine not only quicker but safer. To test this belief he had collected from hospital records (including all the cases he had himself operated on both with and without this apparatus) 15 examples of primary resection for gangrenous gut performed with Murphy's button and 16 cases in which suturing alone was employed. Of the former only one (7 per cent.) had recovered and of the latter six (37 per cent.). 11 cases treated by conservative measures (e.g., formation of an artificial anus) without resection had all died. None of these cases were included in Dr. Kendal Franks's paper published in 1893, and they were not selected in any way excepting that they had all been under the care of hospital surgeons. This was a very striking comparison, but besides this the fatal cases treated by suturing alone had lived on an average twice as long as those in which Murphy's button had been used; in other words, they had given much more promise of survival. Three out of the 10 fatal cases of simple suturing would probably have recovered but for accidental complications (multiple strictures of small intestine, obstruction of intestine by an omental band, and tuberculous phthisis causing constant cough). Moreover, the post-mortem records showed, on the whole, better union of the divided ends after suturing than after the use of Murphy's button. The latter was apt to cause acute congestion by its bulk; its weight was also a disadvantage, and even should the patient recover it was probable that a stricture might result. At any rate, the openings made by operations with Murphy's button in gastro-jejunostomy sometimes showed a marked tendency to contract. The greater time required for the accurate performance of suturing did not appear to be of much practical importance—it had probably been a little exaggerated. The after-shock had not been dangerous in his experience. Whilst primary resection of gangrenous, perforated, or irretrievably damaged intestine in a hernia must always be attended with high mortality, yet it offered the best chance of recovery. This agreed with the results previously brought forward by Dr. Kendal Franks, Mr. C. B. Lockwood, and other surgeons. Turning to the details of the operation in performing resection it was of great importance to excise enough of the damaged intestine so that the sutures might be placed in healthy tissue, and it was nearly always advisable to do it through a median abdominal wound. Special care had to be taken with the mesenteric edges of the two ends, for leakage most readily occurred at this point. Maunsell's method was probably one of the best to employ. If the intestine could be emptied and made to contract this would favour sound union and tend to prevent infection of the stitch apertures by the septic contents. It was probable that the administration of an aperient immediately after the operation would lead to better results than in the past. Mr. Hutchinson had operated on 140 cases of strangulated hernia with a total mortality of 25 per cent. 65 were inguinal hernia, of which 54 recovered; 54 were femoral, and of these 40 recovered; whilst 21 were umbilical, and of these 12 recovered; 34 deaths in all. The great majority were due to the gangrenous or acutely inflamed condition of the intestine and omentum at the time of operation. Five of the fatal cases were possibly due to the employment of too conservative methods.—Mr. ARTHUR BARKER remarked that the question of how to deal with the intestine during operation was a very important one. He did not think that Mr. Hutchinson had resected the gut too lavishly. He quite agreed that primary resection was preferable to Murphy's button. He mentioned a case in which the weight of the button had dragged the paralysed bowel down into the pelvis and caused death. He had given it a very fair trial and had had considerable success with it, but there was no better method than the simple suture. As to the question of time occupied in suturing as compared with the use of the button, that depended very much on the operator. The condition of the intestine was the key to the position and it was of the greatest importance to remove sufficient and suture healthy tissues to healthy intestine beyond the strangulation. In one case he had removed 35 inches of the gut and the case had made a perfect recovery. Out of 11 "anastomosis" operations which he had recently performed he had used the Murphy's button on three occasions. Two of these 11 were gastro-enterectomies in both of which the button was used and both recovered; two were pylorectomies, both were sutured, one recovered and one died; three were resections for gangrenous intestine, one with the button died and two with suture recovered. Three were lateral anastomosis operations, all with suture, and all three recovered; one was a case of excision of the cæcum in which the suture was used and this recovered. Thus, out of eight cases in which a simple suture was used one died, and out of three in which the button was used one died, results which supported the method of simply suturing the bowel.—Mr. HOWARD MARSH referred to the great difficulty in deciding as to the true condition of a piece of intestine. It was often impossible to say if the intestine would recover or not. The bowel was often completely paralysed and obstruction resulted from this. On the whole, it was better to excise the piece of gut if in doubt. Resection was not nearly such a dangerous procedure as was formerly believed. It was most important, he thought, to remove it freely, and he quoted cases in illustration. He had no doubt that the continuous suture was better than Murphy's button. He congratulated Mr. Hutchinson on the excellent results that he had achieved which were a distinct advance on previous statistics.—Mr. CHARTERS J. SYMONDS hoped they should save many more lives by modern methods and by dealing more boldly with the intestine. He referred to the difficulty of emptying the intestine at the time of the operation. This was very important, for in this way it was possible to prevent symptoms of paralysis of the bowel. He quite agreed with the advantages claimed for the direct suture as compared with the use of the button.—Mr. HUTCHINSON, in reply, said that he had used interrupted sutures of fine silk passed through all the tissues of the intestinal wall. The sutures became absorbed or at any rate disappeared. He wished to draw attention to the fact that in the specimen exhibited there

were no adhesions around the bit of intestine and the serous surface was perfectly smooth. This patient had died from ulcerative colitis, wholly unconnected with the illness for which the operation had been performed some years before. He wished to refer to the advantage of sewing up the abdominal wound layer by layer. He quite agreed with the importance of emptying the bowel at the time of the operation and he saw no harm in the use of a mild aperient afterwards. In gastro-jejunostomy he had been equally impressed with the advantage of direct suture.

Mr. A. PEARCE GOULD read a paper on a case of Bullet Wound of the Abdomen, with four wounds of the small Intestine and two of the Mesentery; Operation; Recovery. The patient was a young man, aged 20 years, who was accidentally shot with a small revolver on the evening of Oct. 30th, 1899. A medical man who was called to him found him in great pain and at once administered a hypodermic injection of morphia, and then took him to the Middlesex Hospital where he was seen by Mr. Pearce Gould about an hour after the accident. The wound in the abdomen was two inches below the navel and one inch to the left of the middle line. There was still some pain, the respiration was easy, the abdomen moved freely, and the pulse was 96. The liver dulness was not obliterated and there was no dulness in either flank. There was no paralysis. Six ounces of clear normal urine were drawn off by catheter. Under an anæsthetic the wound was explored and was found to extend into the peritoneal cavity. This was freely opened and blood flowed out from it, but neither gas nor intestinal contents were observed. The intestine was examined and four wounds apparently in the jejunum were found; three of these were perforating and the other involved the serous and muscular coats only. There was no visible escape of intestinal matter. These wounds were closed with Halsted's sutures of sterilised silk and two wounds of the mesentery which were close by were also sutured. No other lesion was found. The peritoneal cavity was cleansed, the bowel was returned, and the abdominal wound was closed. The man made an uninterrupted recovery and left the hospital well on Dec. 4th. The bullet was found lying deep in the left buttock and was allowed to remain. In commenting on this case Mr. Pearce Gould drew attention to the following points: (1) the multiple lesions produced by a single bullet; (2) the absence of serious symptoms; and (3) the necessity for exploration, even in spite of the absence of all symptoms, to determine whether the wound was perforative, whether any viscus or large vessel was injured, and, if so, to treat them. He emphasised the importance of the hypodermic injection of morphia immediately after the accident, both in relieving pain and shock and in controlling the movements of the intestine, and so lessening the chance of fouling of the peritoneum with germ-laden intestinal contents. The case illustrated the necessity for careful and thorough exploration of the abdomen (by operation) in all cases of perforating wound and severe contusion of the abdominal wall.—The PRESIDENT, referring to the use of opium in abdominal injuries and wounds, said that although it had been discarded, not without reason in these cases, it was one thing to give it before diagnosis and another to give it after the diagnosis was made. The morphia syringe might be of great use on the battle-field. When gangrene of the intestine had been diagnosed there might be no harm in giving morphia. As to the absence of symptoms in Mr. Gould's case this was possibly due to the narcotism of morphia.—Mr. ARTHUR BARKER remarked that there was no more difficult class of case to deal with than that narrated. The amount of shock in such cases varied very considerably, and he mentioned the case of a patient shot through the abdomen who walked downstairs and professed himself as feeling quite well. In another case with the same kind of wound there had been great shock. As to the procedure adopted that must vary with the time which had elapsed since injury. If seen early the abdomen should be searched, but if not seen till later it might be well to wait. The velocity of the bullet was another factor. If the speed was great then the intestinal wounds would be very small. In general an operation might well be undertaken in any doubtful case. He quite agreed with the remarks made on the value of opium.—Mr. HOWARD MARSH referred to the possible absence of symptoms even with very grave internal lesions and mentioned a case in point of ruptured colon. In another case of injury in the hunting field the patient went to the city and was well for two days. Then he passed into a state of shock and died. The necropsy revealed rupture of the super-mesenteric artery as a consequence of which part of the small intestine had become gangrenous. He certainly thought it well to operate more freely. An exploratory operation was not attended with much risk. He believed in saline injections as a most valuable method for the treatment of shock.—Dr. NEWTON PITT referred to the remarkable way in which a "cow-doctor" would puncture a distended intestine with a large trocar. He inferred from this that small bullets with high velocity would not do great damage to the intestine.—Mr. PEARCE GOULD, in reply, said that the patient was not narcotised but he was only relieved from pain by the morphia. The amount of shock in such cases seemed to depend very much on the parts which were damaged. If the great sympathetic plexuses were injured then probably there would be great shock. In his case the shock at the end of operation was not great enough to call for saline injection. His main object in bringing forward this case was to emphasise the importance of operation in all perforating injuries of the abdomen.

OPHTHALMOLOGICAL SOCIETY.

Experimental Exophthalmos and Enophthalmos.—Cicatrix Horn growing from the Cornea.—Glaucoma following the use of Homatropine.—Exhibition of Cases and Card Specimens.

AN ordinary meeting of this society was held on Jan. 25th, Mr. G. ANDERSON CRITCHETT, being in the chair

Dr. WALTER EDMUNDS read a paper on Experimental Exophthalmos and Enophthalmos in which he remarked that there were three ways in which prominence of the eyes could be affected experimentally: (1) by acting on the sympathetic, either stimulating it or dividing it; (2) by the administration of certain preparations or drugs; and (3) by operations conducted on the thyroid gland. With regard to the first, stimulation of the cervical sympathetic produced: (1) prominence of the eye; (2) widening of the palpebral fissure; (3) at first increase and later decrease of the intra-ocular tension; and (4) erection of the hairs of the head. Division of the sympathetic produced the opposite effect. Cocaine was one of those drugs which produced proptosis, widening of the palpebral fissure, dilatation of the pupil, and decrease in the intraocular tension. Cunningham had shown that feeding a healthy animal on thyroid extract produced similar results. Dr. Edmunds then showed photographs of monkeys and rabbits both before and after feeding on this substance. Exophthalmos after the administration of thyroid had once been observed in man by Beclère, where it appeared after excessive doses had accidentally been taken by a patient suffering from myxœdema. The third method of effecting the prominence of the eyes was by operations on the thyroid. Removal of the thyroid might produce either exophthalmos or enophthalmos, but in the monkey usually the latter. Numerous lantern slides were shown of animals in which this had been done, as well as drawings of animals in which the sympathetic had been divided. Dr. Edmunds summed up his results by saying that the discussion of these phenomena was particularly interesting in its bearing on the pathology and treatment of Graves's disease; the fact that the most important eye symptom of Graves's disease could be produced by the administration of thyroid preparations certainly suggested that the eye affection was secondary to the goitre. He had not tried the effect of division of the sympathetic in feeding with thyroid extract, but with the administration of cocaine it diminished the effect produced. It therefore suggested itself that the exophthalmos might be benefited by division of the cervical sympathetic, and, indeed, the operation had been tried several times in man. The results were said, however, not to be very satisfactory, at least as far as the general disease was concerned.—Mr. J. B. LAWFORD referred to a case reported by him in which exophthalmos had resulted from thyroid-feeding in a woman aged 34 years, who had suffered from myxœdema for five years. She was treated with the extract with great benefit; but relapsing four and a half years later the treatment was resumed, this time with the development of severe exophthalmos. Her subsequent history was unknown.—Mr. G. MACKAY described a case in which exophthalmos followed an operation on the cervical glands in which the sympathetic had evidently been divided. He also quoted a

case of extreme exophthalmos benefited by the removal of half the thyroid gland.—Mr. W. H. H. JESSOP cited a case in which death followed division of the sympathetic.—Mr. H. E. JULER stated that he had seen in Paris a case of glaucoma in which division of the sympathetic had produced many unpleasant symptoms without enophthalmos.—Dr. W. A. BRAILEY also spoke on the subject and Dr. EDMUNDS replied.

Dr. ARNOLD LAWSON read a paper on a case of a Cicatrix Horn growing from the Cornea. He said that a careful search through ophthalmological literature had failed to discover another example of this curious condition. The patient was a female child, aged eight years, a hydrocephalic idiot. The history given was that about one year previously a white spot had appeared on the right eye and that the eye began to project. Six months later a growth was first noticed on the right cornea and this had constantly increased in size. Latterly a white spot had appeared on the left eye. On examination of the eyes there was seen a large conical tuberculated excrescence protruding between the lids of the right eye. It was half an inch in length and its base attached to the cornea covered about four-fifths of its surface. The left cornea exhibited a yellowish infiltration just below the pupil over which the cornea was bulging; the anterior chamber was deep, the iris was immobile, the tension was slightly raised, and the eye was quite blind. Both globes were very anæsthetic and there was considerable muco-purulent discharge from a chronic inflammation of both conjunctival sacs. The growth upon the right eye was accidentally detached a few days after admission into the hospital and it was then seen to have been attached to the cornea at the apex of a central staphyloma which was left covered by a fleshy soft core which had formerly been embodied in the centre of the growth. The cornea was entirely opaque and the eye was quite blind. After removal of the right eye a few days later examination of the globe revealed a co-arct retina with evidences of chronic degenerative changes in all the various structures. The anterior chamber was completely abolished, the iris throughout its extent being firmly adherent to the back of the cornea, which was bulging centrally. The apex of the corneal staphyloma had evidently been the site of a large perforation which was closed by the fleshy granulations which formed the core of the growth. The growth itself measured half an inch from apex to base and one and a half inches round its base. The interior portion was soft and crumbling, but the external layers were hard and horny and cut with difficulty. A wedge-shaped piece was cut away from the growth and specimens were cut and stained with carmine. The microscope showed that the external layers consisted of several faintly fibrillated strata of a dense homogeneous nature. The layers occupied about one-quarter of the entire thickness of the walls, the rest being entirely composed of small nucleated cells, those most external being stratified. Adopting Mr. Bland Sutton's classification of human horns, this growth would be an example of a cicatrix horn, the rarest of all varieties of horn, and one which had been usually found in connexion with the cicatrices of burns and scalds. The probable etiology in this case was an overgrowth of granulation tissue closing the perforation in the cornea, which, owing to an unhealthy condition of the wound and eye, which was anæsthetic and atrophic, had become exuberant, simulating exactly the condition known as "proud flesh" elsewhere. By a process of accumulation and heaping up the granulations gradually formed a cap over the cornea, whilst the external layers gradually became stratified and horny from the pressure of fresh growth from the central core and by the action of the air. The nature of the growth was evidence that the corneal epithelium bore no share in its production and discounted the possibility that it might be due to a huge crust of inspissated conjunctival discharges.—Remarks were made by Mr. TREACHER COLLINS and Mr. DEVEREUX MARSHALL.

Mr. C. H. B. SHEARS read notes of a case of Acute Glaucoma following a Single Application of Homatropine. A woman, aged 52 years, went to the Liverpool Eye and Ear Infirmary in October, 1899, for reading-glasses. With her hypermetropia corrected her distant vision was nearly two-thirds of normal. One or two drops of homatropine, four grains to the ounce, were put into the right eye. When she came again to the hospital a week later she had all the signs of acute glaucoma in this eye and she could only just count fingers. Pain and vomiting and great loss of sight came on the same evening that the homatropine was used. Eserine and leeches were tried for two hours but without benefit. Iridectomy was then performed, with the result that the tension and sight were quite restored in ten days and had remained satisfactory up to the present. Mr. Shears was of opinion that no mydriatic should be put into the eyes of persons over 30 years of age without careful consideration; that if homatropine were used it would be well to instil eserine before the patient left the hospital; that cocaine followed by eserine was usually quite sufficient for ophthalmoscopic examination; or the new pupil dilator—euphthalmine—would be found very satisfactory for this purpose. Very few cases were published of glaucoma after homatropine and the accident appeared to be very rare.

The following cases and card specimens were shown:—

Dr. E. E. HENDERSON: Microscopic Sections of Growth from the Upper Palpebral Conjunctiva.

Mr. A. Q. SILCOCK: Persistent Hyaloid Artery arising from a Central Coloboma of the Choroid.

Mr. W. T. HOLMES SPICER: (1) Detachment of the Choroid; and (2) Primary Optic Atrophy associated with Diabetes Insipidus.

Mr. L. V. CARGILL: Fibromata in the Eyeidls.

Mr. R. W. DOYNE: (1) Peculiar Appearance in the Cornea; (2) Extreme Cases of Essential Shrinking of the Conjunctiva; and (3) Unusual Case of Striated Keratitis.

Dr. G. F. STILL: Infantile Cerebral Degeneration with Symmetrical Changes in the Macula.

Mr. H. E. JULER: A case of Pemphigus of the Conjunctiva.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The Application of Bacteriology to Public Health.

A MEETING of this society was held on Jan. 12th, Dr. A. NEWSHOLME, the President, being in the chair.

Mr. WALTER PAKES read a paper on the Application of Bacteriology to Public Health. This, he said, had already resolved itself into two branches, the pathological and the technical, each demanding long study and practice; indeed, there was no department of research in which a little knowledge was so dangerous a thing or so prone to lead to the grossest errors. He felt this very strongly in connexion with the bacteriological examination of water, milk, and even of pathological secretions by the public analysts, who, though rightly required to be highly qualified chemists, if not Fellows or Associates of the Institute of Chemistry, are not required to have the knowledge and training essential to the exercise of functions which, if not committed to professed bacteriologists, should be jealously retained by the medical officer of health. This officer if he had undergone a course of laboratory instruction, might easily become an adept in the examinations required for purposes of public health. These examinations were—(1) diagnostic and (2) preventive. Perhaps the most important of the former was the identification of the tubercle bacillus in milk, the more so since it appeared to acquire greater virulence in the bovine organism, and infants were far more susceptible than adults. With proper precautions as to the complete decolourising of the tissues or the milk residue, it could be identified with certainty and distinguished even from the smegma bacillus which most nearly resembled it both in appearance and in its behaviour towards stains, and had been found in the sputa, urine, and milk. Mr. Pakes described the precautions to be observed in taking samples of these secretions and of fæces, and the details of a modification of the Ziehl-Nielsen and Honsell's staining processes. Next in importance was the diagnosis of diphtheria. He had examined the secretions from nearly 3000 sore-throats, of which 1836 during the last five years had been systematically examined for the different microbes, with results which he exhibited in tabular form. The Klebs-Löffler had been found alone in 289 and associated with Hoffmann's in 18, and with strepto- or staphylo-cocci in 36, making 343 of true diphtheria, Hoffmann's alone in 89 and with cocci in 13, strepto- or staphylo-cocci or both in 339, while the rest showed other forms or none. Hoffmann's gave rise to an

infectious and specific sore-throat, and the so-called "septic throats" were caused by streptococci, differing morphologically from those present in health, and by staphylococci, especially staphylococcus aureus, which as well as the saccharomyces albicans produced a membranous exudation indistinguishable clinically from that of true diphtheria. He gave examples of the value of bacteriological examination in verifying and in correcting clinical diagnosis, whether positive or negative, and explained the circumstances under which the Klebs-Löffler bacillus, though present in the throat, might fail to appear in the cultures. He believed that whatever the cost of the bacteriological examination of every "sore throat" among school children, it would, as a means of preventing outbreaks of diphtheria, effect a saving of public expenditure as well as of lives. More difficult was the detection of the Eberth-Gaffky or typhoid bacillus; to look for it in the blood was useless and in the urine it appeared far too late for diagnostic purposes. It was present in the spleen and Peyer's glands from the first, but these were inaccessible. In the fæces it might be found late in the second week, but only when set free by ulceration, and then its isolation from the bacillus coli communis was beset with difficulties as yet well-nigh insuperable. In all cases in which the diagnosis during life had been doubtful the splenic pulp should as soon as possible after death be examined by cultures and by the so-called Widal's test. He felt it a duty he owed to his master, Gruber, to state that the credit of the discovery of this test was really due to him, that he had suggested its employment in the diagnosis of enteric fever and cholera, whereas all that Widal did was to diagnose enteric fever during life by the application of Gruber's reaction. Mr. Pakes then described at considerable length the procedure as practised at Guy's Hospital, the cultures, dilutions of the serum to various degrees, and the conclusions to be drawn from the occurrence or absence of a reaction with each at successive stages in the course of the disease. One remarkable observation was that there were cases of undoubted enteric fever in which the organism made no attempt to combat the disease, and for that very reason the patient's serum failed to react. With these rare exceptions Gruber's test was almost conclusive even when opposed to the clinical diagnosis, for with the precaution of successive observations the error due to the patient having been immunised by a previous attack might be avoided. Preventive examinations were quantitative or qualitative. In the quantitative examination of water, which was essentially a comparative observation, it was of the utmost importance that all the conditions of collection, media, inoculation and plating, temperature and periods of incubation, and the mode of enumeration should be identical. These he explained at great length, indicating at each step the most frequent causes of discrepancies and errors, some of which had received little if any attention. Thus in very foul waters insufficient dilution led to almost incredible under-estimation of the numbers of the bacteria, the stronger colonies saturating the gelatin around with toxins fatal to other and weaker forms in their vicinity. Thus, having made two dilutions of a sewage effluent of 1 in 10 and 1 in 1000 respectively the means of several plate cultures of each gave estimates of 386,000 and 4,600,000 to the cubic centimetre, or nearly 12 times as many in the case where there had been a hundredfold dilution. The sample should be packed in ice until the incubation had begun and the enumeration made on the third day, the temperature giving the most valuable results being 20° C. Pathogenic germs, however, grew best at 37° C., the temperature of the blood, but they and others flourishing at the same temperature were usually as 1 to 10, 15 or 20 of those thriving at 20° C., and relatively less numerous as the total numbers were greater. Discussing the qualitative examination he referred to the inadequacy of most descriptions of bacteria for their identification and enumerated the points that he felt requisite for a complete definition. The organism that in this country was most desired to identify in water was that of typhoid fever, but this was very rarely possible, it being necessarily associated with numerous intestinal bacteria, especially the bacillus coli communis, which was not only far more numerous and stronger, but yielded a toxin extremely fatal to that of enteric fever. None of the procedures hitherto adopted for their separation were satisfactory. He then explained his own method based on the facts that practically none but the Eberth-Gaffky, the bacillus coli, and the bacillus enteritidis of Gaertner would grow at 42° C. and anaerobically. He used Kitasato's glucose formate broth and Buchner's tubes incubated at 42° C. for 24, 48, and 72 hours, transplanting any growths to Petri's dishes at 20° C. The water to be examined he concentrated to $\frac{1}{10}$th of its volume by filtration through a "bougie" from within outwards under a pressure of three atmospheres. He thus found in the 300 samples of water examined 50 per cent. of them to contain bacillus coli. The quantity of water operated upon varied from 200 cubic centimetres to as little as 20 cubic centimetres, the smallest volume of the same waters yielding colonies under the carbolic process having been at least 600 cubic centimetres. It was futile to look for, or at any rate to rely on, the possible but improbable detection of the typhoid bacillus, but the bacillus coli was synonymous with sewage, although almost ubiquitous. For practical purposes water containing it in 20 cubic centimetres or less should be condemned, in quantities between 20 and 50 cubic centimetres deemed highly, and in those between 50 and 100 cubic centimetres slightly, suspicious. Only when still larger volumes were required could a water be pronounced probably safe, or if none could be found in the two litres used absolutely so. He would not depreciate chemical analysis, but if bacteriology could not demonstrate previous contamination by organic matter, long since completely transformed into nitrates, chemistry could not differentiate between infective and inert organic matter, or even between sewage and vegetable matter. He had found the bacillus coli in every five cubic centimetres of a water which yielded only 0·004 part of albuminoid ammonia and used up only 0·02 part of oxygen per 100,000, in which when on a previous occasion these figures had been 0·003 and 0·01 respectively there were no bacilli coli found when 50 cubic centimetres of water were examined. The examination of milk was attended by special difficulties; the bacteria varied under circumstances from a few scores, hundreds, or thousands to 30,000,000 per cubic centimetre. London milk usually containing from 3,000,000 to 4,000,000. It therefore required dilutions from 1 in 10 to 1 in 1000, as did sewage. Then as a product of the living body it was very apt to contain organisms like the streptococci thriving at 37° C., but easily crowded out at 20° C., while for sterilising he found neither Pasteurising at 65° C. nor exposure to 100° C. for ten minutes sufficient, undiluted milk requiring half an hour's boiling, and milk with an equal volume of water a like exposure to a temperature of 80° C. Centrifugalisation of the milk in stoppered tubes was indispensable, and the cream and the sediment should be spread separately on cover-slips, dried, flamed, stained, and examined, the removal of every trace of fat being imperative, especially in the application of the Ziehl-Nielsen process for the detection of tubercle bacilli. Failure to demonstrate these, certainly in the case of mixed dairy milks, had no more value than other negative evidence. The streptococcus of bovine mastitis was often found, of course accompanied by numerous pus cells and leucocytes; and though a few leucocytes were always present and the streptococcus had not been certainly proved to be pathogenic to man, yet milk the product of an inflamed udder, the sediment from which had been taken by a pathologist for pus from a psoas abscess, was not fit for human, much less for infants', food. He would put the limit at a dozen or so leucocytes in the field of a one-sixth objective. Inoculation experiments on guinea-pigs were always desirable in doubtful or negative cases, but the sediment used should first be submitted to a temperature of 56° C. for 10 minutes by which means certain organisms often present and speedily fatal to guinea-pigs were rendered innocuous. The bacilli of enteric fever and of diphtheria might be introduced from without; the latter might be detected in cultures on inspissated blood serum, but the search for the Eberth-Gaffky was even more hopeless in milk than in water, while the bacillus coli was almost always present. He concluded with a few remarks on ice-creams, the examination of which was the same as that of milk, though the enormous numbers of the bacteria made extreme dilution imperative. But though from 20,000,000 to 30,000,000 might be present the effect of boiling the milk, often done to prevent souring, must not be forgotten. He had himself with no other precaution than this made from milk containing 4,000,000 bacteria per cubic centimetre ice-creams with only 1000. One can thus understand how by boiling the milk, &c., ice-creams prepared

amidst the least cleanly surroundings may be made to contain the fewest bacteria.

CLINICAL SOCIETY OF MANCHESTER.

The Prevention of Tuberculosis.

A MEETING of this society was held on Jan. 16th, Dr. JUDSON S. BURY, the President, being in the chair.

Dr. JAMES NIVEN, medical officer of health of the city of Manchester, opened a discussion on the Prevention of Tuberculosis. He remarked that a great reduction had taken place in the mortality ascribed to phthisis during the last 50 years, especially in the earlier decades of life. This had been ascribed to what might be called indirect methods of prevention, such as improved conditions of dwelling, the drainage of the soil, an improved standard of cleanliness, the diminution of overcrowding, improved ventilation, the lighting and cleansing of workshops, and the diminution of the hours of work. To these factors might be added others certainly no less important, such as the abolition of child labour, contrivances for the removal of injurious dusts, better and cheaper food, and cheaper clothing. Some of these were precarious in their tenure and, unfortunately, they were amongst the most important—viz., the possession of better and cheaper food, cheaper clothing, and the diminution of overcrowding. Another set of indirect conditions making for betterment were those pertaining to the knowledge of disease and especially to a knowledge of this disease. The pathology of tuberculosis was, thanks to the discoveries of Villemin, Chauveau, Koch, and others, now so much better understood than was previously the case, and the conditions under which the disease was held in check were so much more fully appreciated, that the proportion of complete recoveries was steadily improving. Moreover, cases treated by a skilful physician or surgeon would now under his instruction cease to be a source of infection. Although they might confidently expect the influences just enumerated to continue to exercise an effect on phthisical mortality, that influence would be limited and there would be always counteracting forces at work tending to the production of overcrowding, alcoholism, and dirt—each of them potent factors in maintaining the disease. It was certain that the indirect means of prevention were inadequate to reduce tuberculosis to a negligible quantity. Could they do better by direct means of prevention? The answer was that they could, and that in any case they were bound to use their knowledge of known dangers to remove them. The all-essential condition in the direct campaign against tuberculosis was an educated, rigorous cleanliness. By the side of this condition others fell so completely into the background that they might for their present purpose neglect them. This educated cleanliness implied two sets of operations: (1) those directed against allowing sputum (or other infective discharges) from phthisical or bronchitic persons to be dried and broken into dust; and (2) those directed towards preventing the possible accumulation of such dust should the direct interception of discharges fail through ignorance or inadvertence. How, then, were they to pervade all ranks of society with a working belief in the necessity and efficacy of such measures, and in particular to bring them home to tuberculous people and their relatives? For this purpose they might be said to have three main forces. Of these probably the most powerful was the medical profession. No medical man should now be allowed to leave any medical school or to pass his final examination without a working knowledge of the measures by which he was obliged to counteract the propagation of tuberculosis from any person who might consult him. The drilling required for the purpose was little compared with the advantage to be reaped. Then, again, the sooner the nature of an attack was perceived, the sooner would effectual measures of prevention be taken. Hence every medical practitioner should know how to examine discharges for tubercle bacilli and he should also know how to diagnose obscure illnesses by the use of minimal doses of tuberculin. It would, no doubt, usually happen, especially in difficult cases, that busy practitioners would refer such examinations to a bacteriological expert in the former case and to hospital physicians in the other. But the knowledge would be both useful and valuable all the same. It was necessary to recognise at the same time that busy practitioners in the poorest quarters of large towns would not have the time to give the instruction required, much less to see that it was carried out. It was in the poorer districts, then, that the work of prevention which they were entitled to expect from practitioners would absolutely need much supplementing. In fact, the work in such districts would have to be done by other agencies. It was at this point that their second force came in—viz., the sanitary authority. The work of the sanitary authority was chiefly concerned with instruction and cleansing. The work of instruction had been carried on by the Manchester Corporation on a tolerably large scale. In three different years handbills had been distributed to every house in the city giving instructions in the precautions to be taken in the presence of phthisis. The Ladies' Health Society had also given a great amount of instruction in the poorer districts. A great work of education had been carried on by the medical staff of the Manchester Hospital for Consumption for many years, aided by leaflets prepared by Dr. Ransome. Not a few popular lectures had been given and the subject had been of late frequently mentioned in the newspapers. There was no doubt that the general public was beginning to know more about it and to take precautions, although this would not apply to the poorest class. Young medical men ought to instruct the people by suitable lectures, which would render their own ideas precise and do much good. The sanitary authority was extending its sphere of instruction. Voluntary notification of phthisis had now been in force in Manchester for four months and Dr. Harold Coates was carrying out the administration which had ensued. In order to establish their methods and to advance with a sure foot they had requested notifications, so far from public institutions only. During the four months they had had some 450 notifications. In each case reported, Dr. Coates visited the house and saw that the requisite measures of disinfection were carried out, gave precautionary instructions, and investigated the etiology of the case when possible. Generally disinfection was carried out in their usual manner. When the patient could not be shifted from his room the bedclothes were all changed, and the bedclothes, &c., disinfected with steam as usual, the room was disinfected with solution of lime, and not with solution of chloride of lime. Fortnightly visits were generally paid by the visitors of the Ladies' Health Society, who saw that strict cleanliness was kept up. In this way the rooms were rendered free from infection; all that was subsequently necessary was, not successive disinfections, but a sustained cleanliness. It would be noted also, that, so far, they had completely surmounted the objection to notification, but that it would be impossible to keep such precautions up. There had been no real difficulty, nor did he anticipate any if the present organisation were extended. Not only so, but what had really surprised him was that, with, he thought, one exception, the agents of house property had readily acceded to his request that they should agree to the disinfection of the house or of particular rooms. As they had to repaper and sometimes to repair the rooms disinfected the expense entailed was not inconsiderable. In the instance in which exception was taken an explanation was found sufficient to remove all objection. The third force at their disposal was treatment in hospital. The difficulties in the way of this resource lay in the great expense which it would involve. A sanatorium for consumptives was of great value in the way of educating patients in the means and habits of personal prevention. What was even more wanted for direct prevention was an isolation hospital which would receive not early cases, but patients in a more advanced stage. Patients who were bedridden had, naturally, a considerable objection to go to any home for dying cases, although they went, but very reluctantly. It would be an excellent thing if, with the sanatorium about to be provided for the treatment of tuberculous patients from Manchester, there could be combined at the public expense an isolation hospital in the same grounds. There would then be no difficulty in getting suitable cases admitted. These would be selected as the result of notification from among those households in which the greatest benefit in the way of prevention could be conferred. There was now a strong feeling growing up, largely in consequence of the action taken at Liverpool, that the guardians of the poor should make suitable provision for tuberculous patients. Such provision would necessarily be largely in the nature of isolation blocks, but might usefully be sub-divided into a sanatorium and an isolation hospital. If this movement extended it was

to be hoped that there would be no idea of pauperisation attached to the tuberculous poor, so that the benefit of these institutions might be extended to those who had not sought relief. Meanwhile, it was to be hoped that a full response would be made by the medical profession to the request of the corporation for a notification of cases, so that they might know what hospital provision would be required and on what shoulders it might best fall. This was, of course, only one of the results of notification, but it might prove to be one of great importance. He would again repeat that in the interests of prevention hospital provision for consumptives would, in his opinion, most usefully take the shape of a joint sanatorium and isolation hospital.

A vote of thanks was given to Dr. NIVEN and the following gentlemen took part in the discussion: the PRESIDENT, Dr. T. C. RAILTON, Dr. H. R. HUTTON, Dr. A. WAHLTUCH, Dr. T. HARRIS, Professor W. J. SINCLAIR, and Dr. E. VIPONT BROWN.

MIDLAND MEDICAL SOCIETY.

Exhibition of Cases and Specimens.—Treatment of Mastoid Abscess and the Radical Cure of Suppurative Otitis Media in Children.

THE fifth ordinary meeting of this society was held on Jan. 17th at the Medical Institute, Birmingham, Dr. E. RICKARDS, the President, being in the chair. The following gentlemen were elected members of the society: Dr. W. D'Este Emery and Dr. W. R. McCamon.

Mr. H. G. BARLING showed a patient who had suffered from Chronic Intestinal Obstruction which he had relieved by the formation of a fæcal fistula and subsequent intestinal anastomosis. The patient was a male, aged 52 years, and for 15 months had suffered from attacks of abdominal pain of great severity. During the last four months before he came under observation he had suffered much from constipation and his abdomen had during this time increased steadily in size whilst he had lost in weight; later he only passed flatus per rectum and no motion at all. Finally, there was no escape of flatus. The abdomen at this time (Oct. 24th, 1899) was extremely and generally distended and was very tense, no tumour could be palpated, and there was nothing in the rectum. Vomiting was entirely absent and had been so all along; the pulse was about 90 and the temperature was 100° F. As it seemed probable that the sigmoid flexure was distended an opening was made with the intention of performing sigmoid colotomy, but this part of the bowel was found to be empty, as was the small intestine. The finger in the wound detected a huge coil of distended bowel towards the middle line of the abdomen, but this could not be brought into the wound. This incision was therefore closed and another was made between the middle line and the first incision, exposing the distended coil of gut, and to it by a complete circle of sutures the peritoneum and transversalis fascia were secured. A small opening was now made into the gut and a huge fæcal escape took place for days. On Nov. 10th the abdomen was opened in the middle line below the umbilicus and the cause of the obstruction sought. It was found to exist in the large intestine just below the splenic flexure; the exact nature of the obstruction could not even then be determined, but there was extreme narrowing of the bowel for about three inches in length, and the intestine was firmly bound down to the posterior abdominal wall and there were some enlarged glands in the meso-colon. The piece of intestine which had been opened proved to be the transverse colon which had made a V-shaped bend downwards towards the pelvis. An anastomosis was made between the transverse colon and the sigmoid flexure with the largest sized Murphy button. A very good recovery followed and in a few days the fæcal fistula had healed. The patient was passing a satisfactorily formed motion every day and had gained weight to the extent of ten pounds. The button was still retained. The patient was shown to illustrate how complete a barrier the ileo-cæcal valve formed, preventing any regular regurgitation from the distended large intestine into the small, and as an example of the advantage during the period of obstruction in chronic cases of simply giving relief by fæcal fistula, leaving more radical treatment to a later period when the obstruction had been thoroughly removed.

Dr. O. J. KAUFFMANN showed a man, aged 33 years, suffering from Scleroderma. The patient had been exhibited to the society on Oct. 11th, 1899, and was now again shown because the sclerotic condition was improving markedly in the thigh, whilst in the leg it appeared to be at a standstill. Some doubtful fresh patches had meanwhile appeared in the neck. The general health had remained perfectly good.

Mr. J. FURNEAUX JORDAN showed two specimens of Uterine Myoma. The first specimen was an interstitial myoma of about the size of a Tangerine orange. It had been removed by vaginal hysterectomy in August last from a woman, aged 51 years. The menopause had taken place three years previously, but although there had been no hæmorrhage the uterus had given her more and more trouble. It had become retroverted, by which change the growth was certainly felt more distinctly, and it had caused increasing pain and difficulty in defecation, so much so that she was unable to work. She had been so relieved by its removal that she was now working hard as a charwoman and did not suffer at all. The second specimen was a uterus with a large subperitoneal fibroid growing from the fundus and with three smaller nodules in the uterine wall. The patient had suffered very little from pain and hæmorrhage, but for some weeks she had had the most obstinate vomiting. The vomiting came on soon after food was taken and did not yield to any form of treatment. She was losing flesh rapidly. The uterus was removed by that form of hysterectomy known as the combined method, in which the vaginal portion of the separation was done from below and the separation from the broad ligaments done from the abdomen. The operation was performed in October last and the patient made a good recovery.

Mr. LEONARD GAMGEE read a paper on the Treatment of Mastoid Abscess and the Radical Cure of Suppurative Otitis Media in Children.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The general meeting of this society was held on Jan. 12th, Dr. Barclay Baron, the President, being in the chair.—The President showed an obscure Naso-pharyngeal Case. A middle-aged man after having a discharge of pus and blood from the naso-pharynx and deafness for several months, began to suffer from severe paroxysmal pain in the right side of the head, becoming gradually worse and more extensive. Later there was numbness of the skin of the same side of the face. Examination revealed a small hard circumscribed swelling with a smooth surface in the upper part of the naso-pharynx.—After a few remarks by Mr. Mayo Collier, Mr. Wyatt Wingrave said that he could detect a hard swelling, apparently on the internal pterygoid plate, which was suggestive of a new growth.—Mr. J. Bark (Liverpool) related a case of Painful Spasm of the Muscles on one Side of the Face cured by removal of a naso-pharyngeal polypus.—Mr. Wyatt Wingrave showed a case of Lupus of the Fauces with extensive ulceration extending down to the larynx, causing much destruction of tissue.—Dr. R. Woods (Dublin) expressed a doubt as to the case being lupus and advised specific treatment.—Mr. Mayo Collier gave reasons for similar views and Mr. Wyatt Wingrave replied.—Dr. Dundas Grant showed (1) a case of Emphysema of the Orbit in a labouring man due to blowing the nose; (2) a case of Laryngitis secondary to Rhinitis; (3) a case of Bridle-like Synechiæ between the Septum and the Inferior Turbinal Body without ascertainable cause; and (4) a case of Lupus of the Inferior Turbinal.—Dr. Furniss Potter showed: 1. A woman, aged 47 years, with Post-nasal Growths which he considered to be persistent adenoids. After giving his reasons for this view he mentioned other cases of post-nasal growth in adults which had proved to be malignant. 2. A case of a Growth on each Ventricular Band in a man aged 39 years. 3. A case of Extensive Papillomatous Growth of the vocal cords.—Mr. Atwood Thorne showed (for Dr. William Hill) a case of Stammering in a youth.—Dr. Dennis Vinrace thought that, the cause being neurotic, the treatment indicated was careful tuition with avoidance of attempts at conversation when excited and attention to the general health.—Mr. Mayo Collier advised the removal of the adenoids present and exercise for the thickened palate.—Mr. St. George Reid observed that in some cases where the velum was sluggish and pendulous and articulation was indistinct it was advantageous to remove a small piece of its posterior edge.—Dr. Brown Kelly (Glasgow) read a paper upon Epistaxis from the Ethmoidal veins. He reported several cases of severe epistaxis in which the stream of blood had been traced to the

septum above the anterior end of the middle turbinal. He showed that the vessels ruptured were probably the anterior ethmoidal veins and that these were closely connected with the intracranial circulation. The absence of valves in the veins and the pressure in the longitudinal sinus would allow of a profuse flow in a backward direction. Hæmorrhages from this source were easily checked by packing gauze between the middle turbinal and the septum anteriorly.—Mr. J. Bark observed that recurrent epistaxis in adults usually occurred in the position indicated by Dr. Kelly and that a small plug inserted between the middle turbinal and the septum was effectual and caused little discomfort.—Dr. R. Woods (Dublin) alluded to the constitutional treatment of such cases.—Mr. Mayo Collier and the President also joined in the discussion.—Dr. R. Woods showed a skiagram of a Foreign Body in the Œsophagus of a Child which was successfully removed.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on Jan. 15th, the Vice-President, Mr. Henry E. Clark, being in the chair.—Dr. T. K. Monro and Dr. Charles Workman showed a Heart with Stenosis of Mitral, Aortic, and Tricuspid Valves, with an old Abscess in the Wall of the Right Ventricle. The patient was a female, aged 27 years, who eight years before had suffered from "cold in the chest" followed by rheumatic pains in the legs. From that time she had continued liable to winter cough, while breathlessness on exertion and later palpitation of the heart had supervened. She was admitted to the Royal Infirmary on account of breathlessness and swelling of the abdomen and legs. She died three weeks after admission apparently through weakness brought on by vomiting. In addition to the widespread lesion of the endocardium a small abscess cavity was found on the posterior wall of the right ventricle. This contained greenish caseous pus and some calcareous material. The contents of the abscess presented on cultivation Fraenkel's diplococcus. The lungs showed some passive congestion and the liver, spleen, and kidneys were similarly affected. The case seemed to Dr. Munro to be one of recovery from ulcerative endocarditis, death being due to the effects of the cicatricial valvular lesion.—Dr. R. Barclay Ness and Dr. A. R. Ferguson showed a Heart in which mitral and tricuspid stenosis existed; also the brain from the same case, in which the right internal carotid artery was occluded by embolism. There was a history of the patient having suffered from breathlessness and palpitation on exertion since the age of nine years. She was aged 28 years when she died. Ten days before death she had a splenic infarction and death was due to cerebral implication. The embolus was found near the termination of the internal carotid artery at the base of the brain.—Dr. Beatson showed: 1. Multilocular Cystoma of the Left Ovary from a patient aged 67 years. The tumour on section appeared to have the characters of a carcinoma. 2. A similar tumour from the right ovary of a patient aged 35 years. This growth consisted of smooth-walled cysts with cylindrical epithelial lining.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held in the Guildhall, Windsor, on Jan. 24th, Mr. W. B. Holderness, the President, occupying the chair.—A collection of Microscopical Sections, chiefly Embryological, of the Chick was shown by Dr. Elgood, Dr. R. S. Miller, and an anonymous exhibitor.—Dr. G. E. Hale showed (1) a case of Spontaneous Cure of Popliteal Aneurysm in a man who had had syphilis; and (2) a case of Chronic Disease (? Atrophic Scirrhus) of the Left Breast in an elderly woman who had an abscess 40 years ago, which was lanced in the site of the present disease, and a tumour had been present there ever since.—Dr. A. J. Anderson (Ashford) read a paper on the Use of Anti-streptococcic Serum. The first case was that of a primipara who came under his care a fortnight after her confinement with all the signs of puerperal septicæmia. Despite tonic, stimulant, and antiseptic treatment of a vigorous kind her condition became desperate, and three weeks after the birth of the child the serum was brought into use. Five injections of 10 cubic centimetres each were made on successive days and the woman made a good recovery. A bacteriological examination showed the presence in the lochia of the streptococcus brevis, staphylococcus, and a "large bacillus." The serum was supplied by Messrs. Burroughs, Wellcome, and Co. The second and third cases were those of erysipelas in a severe degree. In the former, treated unsuccessfully by the usual remedies for nearly three weeks, three successive daily injections of 10 cubic centimetres each brought about a great change for the better and the man made a complete, though tardy, recovery. In the latter, which was treated from the outset by the serum, four successive injections of the same strength resulted in a rapid convalescence. Dr. Anderson thought very highly of the treatment, but considered that it should be used with caution because of its depressing effects on the circulation.—A prolonged discussion followed in which the President, Dr. R. S. Miller, Mr. J. Brickwell, Mr. J. H. Tomlinson, and others took part.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held on Jan. 19th at the Owens College, Manchester.—Dr. J. B. Hellier (Leeds) succeeded Dr. A. Donald (Manchester) as President.—Dr. Lloyd Roberts described a case of Suppurating Intra-ligamentous Cyst successfully removed by Abdominal Section. He discussed the technical difficulties of enucleating such tumours and the manner in which they might become septic.—Remarks were made by Dr. A. Donald, Dr. W. Walter, Dr. J. W. Martin, Dr. H. Briggs, Dr. E. T. Davies, and the President.—Dr. W. E. Fothergill showed specimens of (1) Exomphalos; (2) Pseudo-anencephalus; and (3) Ovarian Cyst with an Unusual History; and a drawing of Hæmatoma Vulvæ.—Remarks were made by Dr. Lloyd Roberts.—The President showed a Microscopic Section of Epithelioma Vulvæ.—Dr. Walls related a case of Expulsion of a Dermoid Cyst per rectum during Labour. The specimen he showed, with microscopic section, as an ovarian dermoid. The tumour had apparently been forced downwards by the advancing head till the rectal wall gave way before it and thence it was delivered through the anus. When Dr. Walls saw the case a few days after labour the longitudinal slit made by the tumour in its passage into the rectum was distinctly apparent to the finger. The patient made an excellent recovery.—Remarks were made by Dr. S. Buckley, Dr. H. Briggs, Dr. A. Donald, Dr. Lloyd Roberts, and Dr. W. Walter.—Dr. S. Rumboll read a paper entitled One Hundred cases of Opening the Abdominal Cavity. He specially described several of gynæcological interest and concluded by discussing the questions of (1) the removal of "cystic ovaries"; (2) abdominal drainage; (3) closure of the abdominal wound; and (4) the after-treatment.—Remarkswere made on these points by Dr. Lloyd Roberts, Dr. W. E. Fothergill, Dr. A. Donald, Dr. E. T. Davies, Dr. H. Briggs, Dr. W. Walter, and the President.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held at Hanover-square, W., on Jan. 24th, Dr. H. Radcliffe Crocker being in the chair.—The following cases were shown by Dr. Radcliffe Crocker: (1) A boy, aged eight years, with Prurigo, the disease being limited to the face and hands; and (2) a case of Alopecia in a girl aged seven years. The disease followed an attack of microsporon ringworm.—Dr. J. H. Stowers showed a woman with a Dermato-syphilide of the Nose and adjoining Parts of the Face. He brought the case forward to exhibit the difference between lupus vulgaris of the nose and a dermato-syphilide affecting the same organ.—Dr. D. Walsh sent a case of Nail Disease in a woman. The symmetry of the condition was remarkable.—Dr. F. Rufenacht Walters sent a case of Psoriasis in a child.—Dr. Arthur Shillitoe brought a man with a Widespread Symmetrical Eruption which was diagnosed as a Discoid Form of Eczema Seborrhoicum.—Dr. P. S. Abraham sent (1) a young woman suffering from Leuconychia (together with the condition of the nails she exhibited a band of alopecia running along the margin of the forehead); and (2) a case of Lichen Planus in a girl aged 10 years.—Dr. T. D. Savill brought forward a case of Macular Leprosy in a boy. It had been exhibited at a previous meeting. The pigmentation had increased.—In connexion with the Chaulmoogra oil treatment of leprosy Dr. Crocker remarked that the drug should be given in large doses before it could benefit the patient—up to 100 minims or even in larger quantity per diem. Friction with the oil seemed to have a good effect in itself.—Dr. Graham Little showed for Dr. G. F. Still a case of Psoriasis in a Girl.—The cases were discussed by the President, Dr. J. H. Stowers, Mr. Campbell Williams, Mr. G. Pernet, Dr. T. D. Savill, Dr. Arthur Shillitoe, and Dr. W. B. Warde

BIRKENHEAD MEDICAL SOCIETY.—A meeting of this society was held on Jan. 12th, Mr. H. Nazeby Harrington, the President, being in the chair.—Dr. T. B. Grimsdale (Liverpool) read a paper on Peritonitis in the Female After briefly discussing the symptoms and diagnosis cases were related in which operation had been performed. The conditions found at the operation were—(1) solid ovarian tumour with twisted pedicle; (2) localised collection of pus containing pure culture of staphylococci; (3) tuberculous pyosalpinx with tuberculous peritonitis; (4) large localised peritoneal blood cyst; (5) ruptured ovarian cyst with four months pregnancy; (6) ruptured tubal pregnancy at the tenth week; and (7) sub-peritoneal fibroid tumour of the uterus in an old woman aged 67 years. In all but the last case the symptoms led to a clinical diagnosis of acute peritonitis being made; in the last case chronic serous peritonitis was diagnosed. The evidence of peritonitis at the time of operation was either the presence of adhesions or the intense red colour of the peritoneum. If the presence of microbic infection be insisted upon as a *sine quâ non* of peritonitis it is probable that some of these cases should not be considered peritonitis at all from a pathological standpoint. However, the clinical diagnosis was the important point from the side of treatment. In cases of peritonitis the importance of rectal or vaginal examination was insisted upon as a point of great importance in helping to discover the underlying condition which gave rise to the attack of peritonitis.—A vote of thanks to Dr. Grimsdale was proposed and carried and a short discussion ensued in which Dr. W. Floyd, Dr. L. D. Temple, and the President took part and Dr. Grimsdale replied.

Reviews and Notices of Books.

Annual and Analytical Cyclopædia of Practical Medicine. By CHARLES E. DE M. SAJOUS, M.D. Illustrated with Chromo-Lithographs, Engravings, and Maps. Vol. IV. Philadelphia, New York, Chicago: F. A. Davies Company. 1899. Pp. 622.

THE present volume commences with a long article on the Diarrhœal Diseases of Infants by Dr. A. D. Blackader of Montreal, and taking into consideration various subjects commencing with the letters I, J, K, and L, finishes with a contribution on the Salts of Mercury by Dr. Sajous.

The manner in which the book is arranged makes it a most convenient one for reference, and under the different subdivisions of each subject the literature of the three years 1898, 1897, and 1898 is epitomised.

Dr. Blackader's paper already referred to gives a good account of the subject with which it deals, the sections devoted to treatment being exceptionally well done.

Dr. N. S. Davis of Chicago writes on Influenza. The section describing the complications of the primary disease will well repay perusal and special stress is laid on the marked impairment of vitality or vital resistance which frequently ensues and which is shown by continued loss of strength and endurance, mental despondency, and increased attacks of bronchitis, pneumonia, and tuberculosis, not only during its active prevalence, but for many months thereafter. such sequelæ are unfortunately but too well known. A large number of interesting cases are quoted illustrative of the nervous and mental phenomena which may present t emselves.

Most complete also is the article on Insanity by Dr. George H. Roke of Baltimore. The first requisite for a logical study of insanity is a rational classification—one based upon the known pathology or pathogeny of the disease. As Dr. Roke remarks, the time for a perfect classification of this sort has not yet arrived, our knowledge being too vague or incomplete, but he has made an attempt to carry out what is required and has certainly produced a scheme which is workable. Seven classes or groups of mental disturbance are described, most of them clearly differentiated clinically, but all based upon pathology or pathogeny. We believe the classification to be a sound one; we have not the space to give the grouping which has been adopted, but would refer those of our readers who are interested in the matter to the original paper. Diseases of the Intestines are carefully considered by Dr. Augustus A. Erhner of Philadelphia; and Intubation of the Larynx is described by Dr. F. E. Waxham of Chicago. This operation has found more favour in America than in this country. Dr. Waxham strongly advocates intubation instead of tracheotomy. His figures are certainly very striking. He has performed intubation in 543 cases of diphtheria, all in private practice, and obtained 215 recoveries. In the last 143 cases there were 76 recoveries. In 40 cases in which antitoxin was employed in conjunction with intubation there were 38 recoveries, or 95 per cent. It is difficult, however, to compare these results with tracheotomy as practised in England, for Dr. Waxham performs the operation of intubation at a much earlier stage than that at which tracheotomy is usually done; but nevertheless his results are very striking and should encourage a more extensive trial of intubation in this country.

Another good paper is that by Mr. G. G. Davis on Surgical Diseases of Joints, and the contribution by Dr. Sajous on Laryngitis and Kindred Disorders also contains much that is interesting. The same writer also discusses Leprosy and we especially draw attention to the section on Anæsthetic Leprosy, a subject which has scarcely received the attention which it deserves.

There are several other articles which are also worthy of notice, but we can only mention them—namely, Diseases of the Liver and Gall-bladder, by Dr. Alexander McPhedran of Toronto; Locomotor Ataxia, by Dr. W. B. Pritchard; Disorders of the Mediastinum, by Dr. J. McFadden Gaston, sen., and Dr. J. McFadden Gaston, jun., of Atlanta; and Meningitis, by Dr. C. M. Kay of Philadelphia.

The very valuable article on Malaria by Dr. James C. Wilson and Dr. Thomas G. Ashton of Philadelphia will doubtless attract much attention. The description of the various forms of parasite is full and lucid, the discussion on Pernicious Malarial Fever is also good, whilst the section on Treatment contains a large number of useful suggestions.

Raynaud's Disease. By THOMAS KIRKPATRICK MONRO, M.A., M.D. Glasg., Physician to the Glasgow Royal Infirmary, Examiner in the University of Glasgow. Glasgow: James Maclehose and Sons. 1899. Pp. 250.

THIS volume is intended to give an account of the history, causes, symptoms, morbid relations, pathology, and treatment of Raynaud's Disease. The writer may be congratulated on the success of his endeavours, for he has given us an excellent *résumé* of what is at present known as regards this condition and, what is still more valuable, has supplemented it with the results of his own investigations based upon a very considerable experience.

After a few preliminary remarks on Anatomical and Physiological Considerations a few statistics are given, taken from the wards of the Glasgow Royal Infirmary, from which it appears that one case in 3000 admissions to the medical wards represents the frequency of Raynaud's disease. We agree with the author, however, that this is probably an under-estimate, since the affection is frequently associated with some other ailment, which may be more important from the point of view of survival, and so is more likely to appear in the returns.

The etiology of the disease is well discussed, special stress being naturally laid on the influence of cold. Two types of

lesion dependent upon cold are described, chilblain and Raynaud's disease being taken as characteristic instances, and it is shown that whereas in the former the essential lesion is inflammation, in Raynaud's disease it is vascular spasm that produces the clinical phenomena. Dr. Monro states very decidedly that cold not uncommonly is the immediate cause of the first onset of the disease. It was reported to be the case with 22 patients out of 180, 13 being males and nine females, the preponderance of males being due to the influence in them of exposure from occupation. Other etiological factors are also noticed, such as sex, age, heredity, occupation, malarial fever, and sexual disorders.

The characteristic three clinical groups of cases, local syncope, local asphyxia, and symmetrical gangrene, are described in separate chapters, so that very full consideration is devoted to each, and a table is given showing the incidence of different phenomena in the two series at different ages.

Very interesting is the chapter headed Relations between Raynaud's Disease and other Morbid Conditions. It is a suggestive fact that some abnormality in connexion with the cardio-vascular system is noted in fully 12 per cent. of cases of Raynaud's disease, as shown by the author's statistics, but Dr. Monro points out that this statement is misleading, for a number of cases ought, strictly speaking, to be detached from this group and placed under the heading of Bright's disease, or exophthalmic goitre, or some allied neurosis. It is probable also that in some of the cases where a valvular murmur exists the association is a mere coincidence and that in others the endocarditis and the vaso-motor phenomena depend for their inauguration on some common cause. The association between Raynaud's disease and hæmoglobinuria is also duly commented on, although, peculiarly enough, the association does not appear to have come within Raynaud's experience.

The chapters on Morbid Anatomy and Pathology are quite up to the general standard of the work. The treatment is divided into "general and local," general hygiene in regard to diet, fresh air, and regulated exercise being especially noted. The effects of the administration of quinine, opium, nitrite of amyl, and ergot are carefully set forth; the application of electricity is favourably considered. The book is terminated by a copious bibliography. To those practitioners who desire to obtain a further knowledge of Raynaud's disease we can cordially recommend this book.

LIBRARY TABLE.

The Roentgen Rays in Medical Work. By DAVID WALSH, M.D. Edin. Second Edition, Revised, Re-written, and Enlarged. London: Bailliere, Tindall, and Cox. 1899. Pp. 257.—The fact of the issue of a second edition of this valuable little work endorses all that we said in its favour on the occasion of reviewing the first edition. The book provides all the information necessary for the medical man who would apply the "x" rays to diagnosis. This edition deals with the development of the subject up to the present time, including a description of new "make and break," tubes, and localisers. An account of the Wehnelt interrupter is added. Dr. Walsh inclines to the opinion that much future advance will be made in the method of producing Roentgen rays by employing statical machines of the Wimshurst type. Such a generator would be more convenient for field service. The book is more fully illustrated than before, whilst the illustrations maintain the excellence upon which we commented in our notice of the first edition. We should say that the book is a most suitable one for reference on this subject especially in its application to medical practice. We may add that the same publishers have issued "The X Ray Case Book" which is designed for recording results as well as the methods and apparatus used, full diagrams of the human body being added for the purpose. Dr. Walsh is responsible for the plan of the book which is sufficient for 50 cases. This book should considerably facilitate the work of diagnosis by means of the "x" rays, and in affording a more systematic way of noting and entering results will most probably lead to better observations.

L'Électricité en Physiologie. (*Electricity in Physiology*). Par M. LÉON MOROKHOWETZ, Professor de Physiologie, Directeur de l'Institut Physiologique à l'Université de Moscow. Première Livraison. Moscow: Imprimerie de l'Université Impériale. 1899. Pp. 32. Price 1 franc.—This is the first part of a work by a competent Russian writer which promises to fill a gap in physiological literature. There are, indeed, numerous isolated articles to be found in journals like Pflüger's *Archiv*, Dubois Reymond's *Archiv*, and our English periodicals which deal with electricity in its medical aspects, but systematic treatises upon this subject are few and not very accessible to English readers. M. Morokhowetz in taking up electricity in its relations to physiology opens up a wide field of research and his first chapter is devoted to the discussion of Electrostatics and Electroscopy. The various forms of apparatus that have been suggested for the production, demonstration, and application of statistical electricity are passed in review and a short account is given of the principle of their construction. It is intended that each chapter shall be complete in itself. The present part contains a good portrait of Galvani.

Organic Chemistry. By W. H. PERKIN, jun., Ph.D., F.R.S., and F. STANLEY KIPPING, Ph.D., D.Sc., F.R.S. London and Edinburgh: W. & R. Chambers, Limited. 1900. Price 1*s*.—In response to the representations of many teachers in medical schools the authors have added this little volume as an appendix to their text-book of Organic Chemistry. It consists of a short and clearly written account of the more important substances obtained directly or indirectly from plants and animals, compounds, in fact, of physiological importance. With this little volume, therefore, a very excellent text-book on organic chemistry is completed which is well adapted to the requirements of the medical student. We note that all three parts may now be had in one volume. We expressed the opinion before that such a plan would be better if it could be adopted, as the student has quite enough books to consult without dividing a book on one specific subject into three volumes.

Elements of Practical Materia Medica and Pharmacy. By WILLIAM WOOD, M.B., C.M. Edin. Edinburgh: James Thin. London: Simpkin, Marshall, and Co. 1899.—This is an excellent little guide for medical students attending their first lectures on materia medica. It is an unpretentious work, but contains just that preliminary knowledge of the subject which it is important that the student should grasp at the outset. It will assist him especially in connexion with his practical work. It is quite up to date and based on the Pharmacopœia of 1898.

The Newer Remedies. By VIRGIL COBLENTZ, Ph.D., F.C.S. Third edition. Philadelphia: P. Blakiston's Son and Co. 1899. Pp. 150. Price $1.—This might well be called a dictionary of the newer remedies, the drugs being arranged in strictly alphabetical order, including the vast number of antipyretics, analgesics, and hypnotics, for the existence of which the discovery of benzine in coal tar has been responsible. The information contained in the book is of distinct value, especially in throwing a light upon the nature of substances possessing proprietary names. It will therefore be a useful manual of reference for physicians, pharmacists, and students. This compilation must have

entailed a considerable amount of labour and the author is to be thanked for thus distinctly rendering easy the work of reference by others.

New Inventions.

A NEW CHLOROFORM INHALER.

IN order to avoid some of the commonest sources of danger in chloroform administration I have devised the instrument shown in the accompanying diagram. The apparatus consists of a light metal cylinder four inches long and one and a quarter inches in diameter filled with cotton wick; the lower end of the cylinder is open, the upper is attached by a short neck to the inlet of an indiarubber bellows. In the neck of the cylinder—that is, between the body of the cylinder and the bellows—two slots are cut; these slots can be covered or uncovered by sliding a moveable metal collar over them. The action of the bellows is to draw air in through the cylinder and to discharge it through a short length of tubing into the face-piece or other terminal. This air, when the wick has been previously moistened with liquid chloroform poured

upon it through the lower end of the cylinder, becomes saturated with chloroform vapour. If the slots in the neck of the cylinder are opened some normal air that has not passed through the cylinder will be drawn into the bellows; with the slots completely closed all the air entering the bellows is drawn through the cylinder and contains a definite percentage of chloroform vapour; if the slots are partly open the amount of air passing through the cylinder varies inversely with that entering by the slots and the percentage of chloroform vapour transmitted to the terminal is correspondingly diminished. Thus it will be seen that by opening or closing the slots and admitting or excluding air in addition to that drawn through the cylinder any desired dilution of the anæsthetising vapour can be accurately limited, and this limitation can be easily and evenly maintained.

The fundamental principle on which my apparatus depends is the fact that air can only take up chloroform vapour in definite proportions at any given temperature or pressure; and since these do not vary appreciably during an administration it follows that the anæsthetist has practically an absolute control over the strength of the vapour he is employing, and that he can exhibit air only or a mixture of chloroform vapour and air of any intensity up to saturation point. The amount of the mixture administered to the patient depends upon the frequency and completeness with which the bulb is compressed. This amount, however, is limited by the fact that the bulb of the bellows can only be filled and emptied once during a second. Thus a patient respiring 15 times in a minute—that is, at the rate of one complete inspiration and expiration in four seconds—would not during the act of inspiration have sufficient time to receive two complete doses of the mixture from the apparatus.

One of the chief advantages of this instrument is that the intensity of the chloroform vapour cannot be accidentally increased by accumulation of unused vapour within the cylinder, owing to the fact that it is specifically heavier than atmospheric air, and hence will fall rather than rise into the apparatus, and that no admission to the bellows is possible except when they are being worked; in fact, the only source of chloroform vapour for the patient's inhalation is the direct working of the bellows. The amount of chloroform evaporated and lost through the open end of the cylinder when the bellows is not working is approximately one minim per minute. Another advantage of the open cylinder is that the liquid chloroform is absorbed entirely by the wick and hence cannot be dropped on the face, as happens so frequently in the open method, or be injected into the pharynx, as has occurred with fatal results from the use of Junker's inhaler when filled too full or if the tubes are wrongly attached. Should an excess of chloroform be poured into the cylinder the surcharge escapes as soon as the apparatus is in working position. The inhaler is light, portable, simple, and strong; it is very little liable to get out of order, and is *incapable* of having its parts transposed or deranged to the peril of the patient; it is exceedingly easy to manage, constant in action, and totally free from any automatic source of danger.

Although the apparatus was primarily constructed for administering chloroform vapour it is useful for the administration of the A.C.E. mixture and for the administration of many volatile vapours such as are frequently employed in throat and chest affections. I have repeatedly used this inhaler at King's College Hospital and at the Great Northern Central Hospital and in private practice for all sorts of operations with completely satisfactory results. As regards the effects upon the patients I have not observed any particular departure from those ordinarily observed when other methods have been employed. I am indebted to Mr. J. H. Montague of 101, New Bond-street, London, for the care and skill with which he has carried out my wishes in the construction of this instrument.

GEORGE FLUX, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.,
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HOME FOR INEBRIATES.—A sub-committee of the Cardiff Watch Committee has been considering what course should be taken in connexion with the Inebriates Act, and on Jan. 25th Dr. Braithwaite from the Home Office met the sub-committee when the question of erecting a home at Cardiff for 50 inmates (25 males and an equal number of females) was fully discussed. It is expected that such an institution will be sufficient to accommodate all those who come under the provisions of the Act in South Wales and Monmouthshire.

WESTERN DISPENSARY, BATH. — The annual meeting of this institution was held on Jan. 26th. The medical report showed that 932 cases had been treated during 1899. The financial statement showed a favourable balance of £102. On the proposition of the chairman, the Rev. J. Stedman, a resolution was unanimously passed expressing regret at the loss the dispensary had sustained by the death of Mr. H. C. Hopkins, who for 28 years had been one of the medical officers, and the committee added that the poor would long remember him as their friend and kind benefactor.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 3, 1900.

WE are writing under the shadow of a great national anxiety. Amid the gloom of the bitter disappointments which have so far attended the conduct of the campaign in South Africa there has, however, appeared one bright spot—and but for the splendid bravery of our troops we had almost said one bright spot only—namely, the noble way in which the Royal Army Medical Corps are bearing themselves. This is admitted on all hands. Never have medical officers shown greater courage and more self-sacrificing devotion to duty under trying circumstances in the battle-field than have the soldier surgeons of the QUEEN on the present occasion; and never has there been a greater exhibition of zeal, fortitude, administrative resource, and professional skill in the care and treatment of the sick and wounded in the hospitals at the theatre of war. The nation has, at any rate, the satisfaction of knowing that all which courage and personal exposure to danger can do to afford the promptest possible aid to the wounded soldier on the battle-field in rescuing him from the enemy's fire and relegating him to a place of safety where his wounds can be attended to and his sufferings alleviated is done by the officers and men of the Royal Army Medical Corps. We may go further and say that everything that professional foresight could suggest or skilful and humane treatment could practically provide has been done for the wounded officer or soldier in his course from front to base, from the receipt of his injury in action and during his transit along the lines of communication up to the time he reaches the general hospital in the rear or the hospital ship which is to convey him home. However others may fail to realise the fact we may be quite sure that to the wounded all this is an unspeakable blessing which can never be forgotten. The nation cannot lightly estimate the value of such services and we are convinced that the medical profession will not. They will justly feel proud of the valour and devotion so conspicuously displayed by their brothers in the public services during a war which has necessarily entailed a large amount of physical suffering, nobly borne, and has carried grief and anguish into many homes.

Those officers who have personally come under the care of their fellow officers of the Royal Army Medical Corps have had cause to bless them and must ere this have felt that it is an honour to any service club to number such men among its members. There should exist the strongest ties of comradeship and good feeling between officers of all branches of the service. The medical officer participates in all the dangers, hardships, and labours incidental to war in common with the strictly combatant branches of the service, and in addition he has to encounter others in which the latter have no share—the risks, anxieties, and responsibilities of his hospital duties. His work does not end with the fight, but becomes even more arduous and responsible afterwards, under conditions attended with no glamour of fame or publicity. His reward must be derived from his own conscience in the assurance that he has done his utmost for the cause he serves—the saving of life and the relief of physical suffering. How often has it happened in the past that his labours in this respect have been unrequited or even unrecognised by those who were either incompetent judges of their value or regardless of the strain and difficulties under which they had to be fulfilled? And for this reason, although not, of course, for this reason only, the Director-General of the Army Medical Service, in our opinion, did an excellent piece of work for the Royal Army Medical Corps in recommending that a certain number of well-known hospital surgeons should be selected and sent to the front. Apart from the highly-skilled professional aid and advice which they can give they form a special jury of experts well acquainted with all the hospital requirements of wounded and sick men, and they can rightly estimate the way in which these requirements have been met under all the exigencies of war. The nation and the relatives and friends of those fighting rely on the judgment of such authorities and the medical officers have the assurance that their labours and efforts will be duly weighed and by those who are most competent to do so. What has been their verdict the world already knows. Sir WILLIAM MAC CORMAC, Mr. TREVES, and others have spoken emphatically of the splendid work that has been, and is still being, done, as well as of its variety, and of the courage, self-sacrificing zeal, and ability with which the medical officers have laboured. Mr. TREVES, in a very interesting communication to the *British Medical Journal*, has not only fully endorsed the previously expressed opinion of Sir WILLIAM MAC CORMAC in THE LANCET, but he has specially referred to the courage and daring of Major W. BABTIE, R.A.M.C., at the battle of Colenso as calling for some recognition from the medical profession if not from the military authorities. That such recognition will be accorded we have no doubt, whilst we are proud to think that this medical officer's conduct was only typical of the skill and valour of the whole service.

We have only to turn to the first batch of official despatches published in the *London Gazette* last week from the general officers commanding to read of the plucky and devoted services which have been rendered to the wounded in numerous hard-fought actions. It is particularly gratifying to us as medical journalists to place on record the good, and in many cases brilliant, work performed by the medical officers who are so nobly representing their profession at the front. The medical service may well be proud of its traditions in the past and of the way in which it is more than maintaining its reputation in the present.

FROM whatever aspect the war be viewed it affords much material for reflection to all of Her Majesty's subjects. The money cost of it is perhaps the least important of such aspects. It is possible that one of the explanations of our unpreparedness, with all its sad consequences, is our accumulated wealth. For 50 years we have not been in trouble

like other nations. A generation and more has grown up since the Indian Mutiny, and the lessons learned then and in the Crimean campaign have faded from our minds. We have become rich, conceited, and perhaps a little soft—qualities which do not improve our fitness for arduous and novel work like that to which we have been called by the war in South Africa. There are many speculations abroad as to whether the war could have been prevented. Such speculations are not idle, but their time is surely when the trouble is over and there is leisure for retrospect. Disaster is now upon us and no recriminations should be indulged in save with the legitimate hope of staving off further disaster. Fault-finding for the sake of fault-finding must not be countenanced. The heroism with which life has been given up by officers and men, "by duke's son and cook's son," has never been exceeded in British history. And the moving tale of sacrifice by men who can have no possible responsibility for the defects in our preparation for war has excited an unprecedented sympathy for the wounded and killed and for those who represent them at home. If anything were needed to enhance that sympathy it would be found in the narratives of Sir WILLIAM MAC CORMAC and others on the spot who testify to the sublime unselfishness of the wounded soldiers. Mr. TREVES tells of a soldier mortally shot through the abdomen and scarcely able to speak owing to the dryness of his mouth. On the orderly taking some water to him he said: "Take it to my pal first; he is worse hit than me," and that night he died. Such qualities in our soldiers have produced a determination that they and their dependents shall be the peculiar care of the nation and private charity is bent on supplementing the inadequate provision of the State for all sufferers. Nothing can be more right and proper than such a determination.

Fear is felt in some quarters that the patriotic and charitable claims arising out of the war will seriously interfere with the flow of charity in other directions and for other purposes. The *Times* of Monday last in a very forcible article urges the claims of our fellow subjects in the Central Provinces of India who are suffering severely from famine due to drought. 3,000,000 persons or thereabouts are employed on relief works and it is estimated that 50,000,000 people are included in the area affected by the famine. Our contemporary argues that a generous subscription, initiated by the Lord Mayor of London, for the benefit of these fellow subjects will have the best effect on the many enemies of our country and will be the fittest acknowledgment which we can make to those Indian fellow subjects who have so generously proffered their loyalty and support to Her Majesty the QUEEN at the present crisis. We think so too. In other quarters anxiety is expressed lest there should be, as a consequence of the various war funds, a serious falling off in the public contributions to our hospitals. We shall not yield to such fears. We remember that if the country is passing through a period of exceptional anxiety it is also passing through a period of exceptional prosperity. In every branch of trade there is the same report of full work and high wages. The sick, the lame, the halt, and the blind, many of whom have come to grief in the struggle of life, surely constitute a first claim on the profits of prosperous trade. We are neither so impoverished by the war nor so demoralised by our run of prosperity as to deny the strength of this claim. If our contention is right that most of our present misfortunes arise from our affluence we shall do well rather to double subscriptions to hospitals than to reduce them.

Our sick are cared for and healed in voluntary hospitals—institutions which express the willingness of those who are well to help those who are ill, of those who have means to help those who are poor. The inevitable alternative to such institutions are State or municipal hospitals, and we have ample proof that these are more costly than voluntary hospitals, lack many of their best qualities, and proffer no commensurate advantages. We refuse to believe that the nation will abate its generosity to its voluntary hospitals or allow its sympathy for those who fall wounded in the struggle of life to wane because it is called on to assist with exceptional generosity its soldiers who are fighting so bravely and unselfishly for their QUEEN and country. Let us remember always that those who are suffering through the war—heavy though the roll of sick and wounded, orphans and widows may be—are a small number compared with those who suffer through sickness and accident at home. There is yet one more consideration which forbids us to think that our hospitals will suffer seriously in the coming year from the competition of the war funds—it is that many of our sick and wounded soldiers and their families will come to our hospitals for help. We cannot believe that the public will deprive the hospitals of their necessary incomes because they are also called upon by sentiment and right to help the soldiers.

ON July 27th, 1899, a committee was appointed by the Royal College of Physicians of London to consider the certification and classification of deaths from diarrhœa. The committee had been appointed in response to a representation made by the Incorporated Society of Medical Officers of Health. The report was presented to the Comitia held on Jan. 25th, 1900. The committee found, mainly from evidence furnished by Dr. J. F. W. TATHAM, of the General Register Office, that many different terms are employed to designate the disease officially known as "epidemic diarrhœa," whereby its specific character is in danger of being ignored and great confusion ensues. The results of this confusion are serious and important, since this form of diarrhœa causes a large portion (about one-fourth) of the deaths attributed to zymotic diseases. The committee gathered, from a statement furnished to them by Dr. TATHAM, that his main difficulty lies in the impracticability of picking out from the long list of fashionable but unauthorised synonyms all the deaths which in their nature are indistinguishable from deaths by diarrhœa, and which ought to be called by the authorised name. At present he classes as diarrhœa (and therefore under zymotic diseases) deaths certified as follows: diarrhœa, epidemic diarrhœa, dysentery and dysenteric diarrhœa, intestinal (or enteric) catarrh, and gastro-intestinal (or gastro-enteric) catarrh. The following he does not class as diarrhœa, but as diseases of the alimentary canal (thus excluding them from the zymotic class): gastro-enteritis, muco-enteritis, and gastric

catarrh. This second group of cases ought, Dr. TATHAM points out, for the most part to be regarded as identical with epidemic diarrhœa, inasmuch as their age incidence, fatality causes, and general epidemiological characters correspond closely with those of that disease. The committee came to the conclusion that there "is a widespread objection on the part of medical practitioners to the employment of the term 'diarrhœa' in certifying the cause of death. The term is generally held by the public to imply a mild disease, insufficient by itself to cause death. This fact explains the reluctance of the practitioner to employ it in the death certificate, since it may be conceived to imply a stigma upon his own capacity. It is therefore desirable, if possible, to substitute for it some name equally accurate but conveying to the public the idea of a more serious affection, but we regard it as essential that the idea of specificity intended to be conveyed by the term 'epidemic' should be retained." Finally, the committee recommends the College to authorise the use of the term "epidemic enteritis" (or, if preferred by the practitioner, "zymotic enteritis") as a synonym for epidemic diarrhœa, and further recommends that the College should urge the entire disuse as synonyms of epidemic diarrhœa in medical certificates of death of such terms as "gastro-enteritis," "muco-enteritis," or "gastric catarrh." These conclusions were arrived at after the most careful consideration of the members of the committee. They thus bear the stamp of authority, and it is therefore the duty of all practitioners to take note so that accurate statistics may be obtained of the prevalence of the disease in special places or at special times so that due sanitary precautions may be taken to stay the spread of an epidemic.

Annotations.

"Ne quid nimis."

THE ORIGIN OF SEX.

IN a paper read at the Intercolonial Medical Congress at Brisbane in September, 1899, Dr. A. F. Davenport brought forward a number of observations in support of the theory that the sex of the child is determined at the moment of conception and is the opposite to that of whichever parent is at that time in relatively the most vigorous health. He has carried out experiments upon dogs in which by depressing the health of one parent and elevating that of the other he has succeeded in obtaining results which he regards as evidence in favour of his view as to the origin of sex and the power we possess of controlling it. He has also carried out his mode of treatment in the case of 39 families and states that he has succeeded in obtaining children of the sex desired in no less than 32 cases, while in four of the unsuccessful cases no pregnancy followed, leaving only three cases to be reckoned as complete failures. Dr. Davenport considers that Schenck's theory may be taken as directly substantiating his own. He would regard the mother affected with glycosuria as the less healthy parent and therefore only capable of giving birth to female children, since, as he contends, the sex of the child is the opposite to that of whichever parent is in relatively the most vigorous health. The number of theories as to the origin of sex is legion and the one under consideration is but a modification of Stackweather's, "that the sex is determined by the superior parent." As has been pointed out by many writers, if we are to accept any theory of the origin of sex it must be one capable of explaining such well-established facts as the preponderance of male births in Europe, of females amongst mulattoes and other hybrid races, of females amongst polygamous animals, and of the equality of the sexes amongst other animals. If we attempt an explanation of even the first of these facts by Dr. Davenport's hypothesis we must at once acknowledge the superiority of the female parent. Stackweather points out the difficulty of proving female inferiority, but at the same time there are few if any writers who attempt to prove female superiority, and Darwin's theory of sexual selection involves superiority in the male sex and entailed upon that sex. Dr. Davenport brings forward the fact of the excess of male births after a war as being due to the more enfeebling effect of war upon men than upon women; but it has been conclusively shown, and, indeed, this is the only result that can be regarded as proven, that good nutrition produces a preponderance of females, and it is much more likely that the excess of male births after a war, or an epidemic such as cholera, is due to the want of food and general malnutrition than to physical inferiority upon the part of the fathers. Similar facts have been shown by Düsing to hold good in the case of animals. Thus if food be abundant there is an increase in the number of females, and therefore a further increase in the number of individuals of the species, while if food be scarce a larger number of males are produced and the number of the species tends to diminish. Dr. Davenport also quotes Thury's view that an ovum fertilised soon after its liberation tends to produce a female while if fertilised later produces a male. He concludes without any exact evidence, so far as we can see, that a woman is habitually weakened by menstruation and therefore when impregnated soon afterwards is the inferior parent and likely to bear a female child. In the face of our modern knowledge with regard to the relation of ovulation to menstruation Thury's theory can no longer be sustained as it is quite impossible to tell at what period of time any ovum becomes fertilised. Dr. Davenport's results are certainly striking and it is a pity that he has not increased their value by giving them in greater detail. Similar results have been obtained by the breeders of livestock; thus it is a well-recognised fact that an ill-fed cow is likely to produce a female to a well-fed bull and *vice versâ*. We fear, however, that if the method of producing children of any desired sex by influencing the health of the father and of the mother be tried in a large number of cases the numerous exceptions will tend to show that the physical superiority or inferiority of one or other parent is but one of the very many factors that are involved in the complex question of the origin of sex.

MILK, ITS COMPOSITION AND CHARACTERS.

AN interesting article with this heading by Dr. M. Klimmer of Dresden appears in the January number of the *Archiv für Wissenschaftliche und Praktische Thierheilkunde*. Dr. Klimmer observes that on hygienic grounds the examination of milk can no longer be relegated entirely to the hands of the chemist, but if it is to be distributed to the community in a wholesome condition the supply will have to be placed under the supervision of the veterinary surgeon who must, of course, make himself familiar with the chemical aspects of the question. He then proceeds to describe the characters that healthy milk should possess in terms which we have considerably abbreviated. Pure milk, he says, should be white or after the use of green food yellowish-white in colour, of pleasant sweetish taste, on evaporation having a faint smell suggestive of the animal; placed upon the finger-nail it does

not expand, but remains convex, with completely opaque white margin, a test, he remarks, little used but very serviceable. Its viscosity is greater than that of water and diminishes on being warmed more quickly than that of water. Its reaction depends on the test: with phenolphthalein it is always acid; with litmoid or lackmoid it is alkaline; and with litmus paper it is amphoteric, turning blue litmus paper red and red litmus paper blue, which results from its containing two salts of opposite reaction. The acid reaction is due to the primary sodium phosphate NaH_2PO_4, and the alkaline to the secondary phosphate Na_2HPO_4, each of which subdues the action of the other on a delicate test. The boiling point of perfectly fresh milk is nearly 1° C. higher, and the freezing-point nearly 1° C. lower, than that of water, a difference which has been used by Raoult as a means of discovering the adulteration of milk with water. When it has become acid this test cannot be relied on. The index of refraction of milk serum varies from 1·347 to 1·3515. The specific gravity at 15° C. varies between 1027 and 1040. It is augmented by removal of the fat globules and diminished by the addition of water. The electrical conductivity is dependent on the fat, sugar, and albumin which it contains and Thörner found that the electric resistance, which is inversely proportional to the conductivity, varies between 180 and 210 ohms, spring water varying from 519 to 1240 ohms. The addition of water consequently augments the resistance of milk and thus furnishes a means of detection. On boiling, good cows' milk does not coagulate, but both colostrum and asses' milk undergo partial coagulation. The reaction on boiling becomes distinctly alkaline. On standing a wrinkled membrane or skin forms, composed of lime salts, albumin, and casein, and a fresh skin appears after its removal. The chief and constant constituents of milk are water, proteids, milk sugar, oil, and salts, but many other substances have been detected in it, though for the most part the quantity is no more than a trace. Amongst these are alcohol, acetic and citric acids, phenol, resorcin, urea, hypoxanthin, leucin, lecithin, cholesterin, sulphocyanide of potassium, amyloid and dextrin-like substances, colouring matters, ethereal oils, carbonic acid gas, nitrogen, and oxygen. The proteids consist of casein, lactalbumin, lacto-globulin, and a nucleo-albumin. The limits of the quantity of the casein are from 2·9 to 5 per cent. The albumin is only in the proportion of one-half per cent. The amount of milk sugar varies from 4·5 to 4·93 per cent. The acidification of milk sugar or its conversion into lactic acid is effected by many ferments, but essentially by the bacterium acidi lactici and an unorganised ferment contained in the gastric juice. Further active agents are the bacterium lactis aerogenes, bacterium acidi lactici, bacterium limbatum acidi lactici, sphærococcus acidi lactici, streptococcus acidi lactici, and micrococcus acidi lactici, with others. In regard to the salts, which usually amount to from 0·7 to 0·8 per cent., the following figures, which form a part only of a much fuller table, give the mean proportion of each of the constituents: K_2O, 24; Na_2O, 10; CaO, 22; MgO, 2; Fe_2O_3, 0·3; P_2O_5, 26; Cl, 14; SO_3, 3. It is to be especially noted that milk contains neither nitrates nor nitrites. The percentage quantity of water is given by three good observers as 87·75, 87·5, and 86·23. The quantity of fat in milk varies to an extraordinary extent—viz., from 2·5 to 7 per cent.—the average being from 3 to 4 per cent. The oil globules in milk vary in diameter from 0·0001 to 0·006 millimetre. The weight of each particle has been estimated to be about 0·0000004 milligramme. Their number in one litre of milk containing 3·5 per cent. of fat is stated by Masato Toyonaga to be from 691 to 2291 billions with a superficies of from 512 to 719 square metres. The largest oil globules are contained in the milk of Jersey cows, and in morning as compared with evening milk. The fat of milk consists of about 92 per cent. of the triglycerides of stearic, palmitic, and oleic acids, and the remainder of specific butter fats, butyrin, capronin, caprylin, and caprinin, besides traces of lecithin, cholin, and cholesterin. The circumstances modifying the amount of fat in milk are numerous, as idiosyncrasy, breed, age, period of lactation, sexual excitement, mode and time of milking, exercise, and food and hygienic surroundings. Low-country (Holland) cows supply a large quantity of milk, but with less fat in it than those of mountainous regions. Cows begin to yield milk in the course of the third year, which improves in quality to their seventh year, and then gradually deteriorates. In good milch cows the period of lactation lasts about 300 days, and in that time a cow produces from 4·5 to 7·5 its living weight of milk. During the rutting season, according to a widespread belief, the yield of milk is less in quantity but richer in quality. This, however, has been contested. As a general rule it may be said that the briefer the interval between two milkings the greater the percentage of the milk in dry residue and especially in fat, and the smaller the quantity that can be obtained at each time of milking. At each milking it has been shown by numerous observers that the milk gradually becomes more charged with fat, whilst the amount of dry residue remains constant. Thus as a mean of four experiments the quantity of fat contained in the first portion drawn was 0·70 per cent., whilst in the last portion it was as much as 4·73 per cent., the quantity of casein and sugar and salts remaining almost the same in both. Hence, as Dr. Klimmer remarks, by fractional milking any desired proportion of fat can be obtained. The influence of food upon the quantity and quality of milk is very great. Increase of proteids in the food increases the quantity of milk, but evidence is conflicting as to whether it increases the fat. Addition of fat to the food increases the quantity of fat. Dr. Klimmer, without expressing a strong opinion one way or the other, seems to doubt the advisability of using distillers' wash for cows intended to supply milk for the nursery. Dr. Klimmer's essay, we may say in conclusion, contains much valuable information and will bear careful perusal by those interested in the supply of wholesome milk.

THREE CHURCH SOCIETIES.

THREE conferences were held recently at the Westminster Palace Hotel under the auspices of the Church Society for the Promotion of Kindness to Animals, the Church Sanitary Association, and the Funeral Reform Association. Mr. J. G. Butcher, M.P., presided at the meeting of the first-named society, and among the speakers were the Hon. Mrs. Henniker and the Hon. FitzRoy Stewart. It was unanimously resolved that a competent man should be sent out to South Africa to examine into the condition of horses on the battle-field and to report thereupon with a view to bring about an international agreement extending to persons relieving the sufferings of wounded animals on the battle-field the same protection as is now afforded to men who succour wounded soldiers. Dr. William Collingridge, medical officer of the Sanitary Authority for the Port of London, in presiding at the meeting of the Church Sanitary Association, said that manifold agencies for the promotion of sanitation had done good work, but their work was of necessity slow; hence it was that some stronger and more direct agency, such as the Church Sanitary Association, was required as a means of reaching the masses through the existing organisation of the Church. Amongst those who supported this view were Dr. Christopher Childs, the Rev. Septimus Buss, Major Poole, and Mr. Hugh Munby. It was unanimously resolved that an incalculable amount of sickness, suffering, misery, and death would be prevented if the clergy realised what invaluable help they

could render in promoting the observance of sanitary laws and in counteracting and eradicating insanitary habits and customs. The speakers who supported the Right Hon. James Lowther, M.P., the chairman of the meeting of the Funeral Reform Association, were the Earl of Stamford and the Rev. Canon J. Erskine Clarke. The following motions were duly carried: "That excessive funeral floral decoration is to be greatly deprecated," and "That the burial of the dead should not be unduly delayed and the mode thereof should be inexpensive and innocuous."

TWENTY YEARS OF EPIDEMIC DYSENTERY IN JAPAN.

FOR many years past dysentery, whether epidemic or sporadic, has troubled us but little in Great Britain, but the history of the disease, more especially as to the epidemic of 1762, bears record to the mischief which in times gone by it wrought in these islands. Whether epidemic dysentery has disappeared for ever from our midst, and whether it has done so as the result of sanitary measures are questions which in our present state of knowledge are somewhat difficult to answer. But even if it be gone for all time there is in a sense a satisfaction in reflecting upon what we have lost in order that our gain may appear the more. Dr. Stuart Eldridge of the United States Marine Hospital Service, who is stationed at Yokohama, has recently presented to the United States Government an interesting account of the behaviour of epidemic dysentery in Japan. Dr. Eldridge tells us that the statistical records of the disease in Japan date back to 1878, and that up to 1880 it manifested itself almost exclusively in the southernmost of the islands of which Japan consists. Since then, however, the march of the disease has been slowly, but, as events have now proved, surely, towards the north of the group, and a map is furnished with the report before us showing the dates at which the several provinces of Japan became first invaded and the extent to which the several populations have suffered. The progress of the disease northwards has been at times temporarily checked by natural obstacles such as mountain ranges and straits of water, but in the end, following the lines of greatest trade communication, it has vanquished, and last year it obtained a footing in the island of Yezo which, Dr. Eldridge reports, it now threatens to invade entirely. And now as to the sickness and death toll which epidemic dysentery has exacted for the last score of years in Japan. In 1878 the reported cases numbered 1118 and the deaths 208, in 1893 there were 167,305 cases with 41,282 deaths, and last year (1899) 125,989 cases with 26,709 deaths, the average fatality-rate for the whole period under review being nearly 25 per cent. Efforts to control the disease do not seem to have met with much success, but it is hoped that as the people themselves come more clearly to comprehend that the restrictive measures are for the good of the whole community more advance will be made. It is during the summer and autumn that the disease prevails, and it has been noted that low and damp localities come in for a large share of attacks, while the rural districts, having regard to the extent of their populations, suffer more heavily than do the urban. The chief agent in the spread of the disease is, Dr. Eldridge thinks, water, and this fact is, it seems, a possible explanation of its increased incidence on rural as compared with urban districts. Night-soil is used freely to manure the land and this manuring is obviously more common in the rural districts. Hence when the rains come the water-supplies of the rural districts are more likely to be polluted than are the urban. But, curiously enough, the distribution of cholera in Japan in the epidemics which have occurred since 1877 has not followed that of dysentery, albeit cholera is undoubtedly a water-borne disease. The Japanese apparently account for this discrepancy by assuming that the acid fermentation to which the night-soil is submitted before being placed upon the fields kills the cholera bacillus, and they assume, moreover, that future bacteriological investigations will show the bacillus of dysentery to be more resistant under these circumstances than is that of cholera. The Japanese people are, in Dr. Eldridge's opinion, far from adaptable to the necessary hygienic measures for preventing the spread of dysentery. They are quite ignorant of the elementary principles of prevention and there is rarely skilled advice available. Furthermore, we are told that in cases of sudden outbreak of disease religious festivals are organised with a view to propitiating the Supreme Power, and that these functions have the effect of gathering together [the] people from infected as well as healthy localities, there to indulge in practices likely to contribute to the spread of infection and to reduce the powers of resistance of the individual. Dr. Eldridge goes fully into the symptoms and pathology of the disease, but into these we have no space to follow him. He gives, too, a useful summary of the progress as to the bacteriology of dysentery, more especially of Dr. Kiyoshi Shiga's recent work in this direction. Dr. Shiga claims to have found the specific bacillus of dysentery, or, at any rate, of that variety of the disease now seen in Japan. Morphologically it strongly resembles the enteric fever bacillus and has a tendency to produce involution forms. This, the bacillus dysentericus, is killed by exposure to 68° C. for 20 minutes; it has no active movements and flagella have not as yet been demonstrated. Dr. Shiga also claims to have discovered an artificial serum for the treatment of dysentery and certain figures as to a diminished fatality-rate among patients so treated would appear to be of a hopeful nature.

FIRST MEMOIR OF THE LIVERPOOL SCHOOL OF TROPICAL DISEASES.

THE Liverpool School of Tropical Diseases has issued its first memoir under the title of "Instructions for the Prevention of Malarial Fever: for the use of Residents in Malarious Places." The causes of malarial fever are explained to be due to the presence of certain minute parasites called hæmamœbidæ in the corpuscles of the blood. In order to produce an attack of fever about 250,000,000 parasites must be present in the body, while in severe cases a billion or more may be present. In sufficient numbers they may be easily detected with the aid of a strong microscope in a drop of blood drawn from the patient by pricking with a needle. The sudden rises of temperature which occur in this disease, and which are accompanied by shivering (ague), are due to the parasites scattering their spores in the blood-fluid. The parasites grow up together and scatter their spores simultaneously, causing an immediate rise of temperature and shivering. After a variable number of attacks of fever the parasites may largely decrease in number, leaving the patient free from fever for a time. At any moment, however, the number of parasites may increase again, either spontaneously or through the patient's exposure to the rays of the sun or to chill or fatigue. Between the relapses the parasites continue to live in the patient in comparatively small numbers. After they have become extinct no relapses will occur, unless as the result of a fresh infection. Quinine kills the parasites. All parasites or their eggs pass in some way or other from one host to another—that is, from an infected individual, animal or plant, to a healthy one. Suctorial insects give great facilities to parasites for passing from one host to another. Upon allowing a person infected with malaria parasites to be bitten by mosquitoes of the kind called anopheles dissection of the mosquito will disclose the parasites growing in the mosquito.

If, on the other hand, the mosquito be allowed to bite healthy persons nothing like the parasites will be found in them. Malarial fever has been proved to be communicable from the sick to the healthy by the agency of mosquitoes—the anopheles. The question arises, If malarial fever is only carried from man to man by mosquitoes how comes it that the disease is connected with stagnant water, rainfall, or disturbed soil? It is because the anopheles do not breed in vessels of water, tubs, &c., in which the ordinary kinds of mosquitoes breed, but, as a rule, only in stagnant puddles of water on the ground. Such puddles most commonly exist in low-lying flat localities, especially where the ground tends to be marshy and, of course, during continuous rains. They also accumulate in places where the ground has been excavated, embanked, or trenched. Hence it is easy to see how the idea that malaria arises from marshes gained ground, and that it was due to a miasm, or mist, which rises from damp soil. The germs of malaria themselves do not rise from the soil. It is the carriers of the germs, the anopheles, that do so, or rather that rise from the pools of water on the ground. This fact also explains why draining the soil so often removes malaria because it drains away the breeding pools of the anopheles. It is only the female anopheles which sucks blood, the males living on fruit and leaves. After feeding on a man or an animal the female generally sleeps gorged all day on the wall of a room or other place. Every few days she has to fly back to the water where she lived as a larva to lay her eggs, and returns afterwards, probably to the place where she first obtained food. Hence mosquitoes which feed on human beings generally breed in water close to houses. Males can be distinguished from females by their possession of feathery antennæ on their heads. Directions in the modes of prevention of malaria include the avoidance of being bitten by mosquitoes as much as possible. Mosquitoes or their larvæ, especially anopheles, should be killed. They should be prevented from breeding around houses. The use of mosquito nets is essential above all things. Patients suffering from fever or who have lately suffered from fever should always remember that they are capable of spreading the disease to others through the agency of mosquitoes and are even capable of re-infecting themselves through the same agency. They cannot be too careful to avoid being bitten. For the destruction of mosquitoes a search is to be carefully made in and around the house for vessels and pools of water; and if there are many mosquitoes in the house it is highly probable that their larvæ will be found close by. Small pools on the ground containing green water-weed, especially rain-water puddles, are their favourite haunts. All useless collections of water in which mosquitoes breed should be drained away if possible. If this cannot be done recourse must be had to the habitual use of substances, such as kerosene oil, which destroy the larvæ by choking their air-tubes. Cisterns and wells of drinking water should be kept covered in as much as possible. Much useful information is condensed in a very limited space in this welcome booklet, which is issued from the University Press of Liverpool.

VALVULAR DISEASE IN OLD AGE.

IN the *American Journal of the Medical Sciences* for December, 1899, Dr. Robinson insists on the great importance of watching carefully for the first expressions of cardiac insufficiency in old age. When dropsy begins to appear about the ankles or when the serous cavities contain fluid in notable proportion the prognosis is grave and the warding off of progressive œdema and accumulation of fluid is very difficult. The best results which he has seen in such cases have been obtained by the use of Trousseau's wine or the diuretic wine used at the Hotel Dieu, whose good results (even if temporary) are noteworthy. The diuretic wine is composed of digitalis, squill, juniper berries, potassium acetate, and white wine, and is prescribed in dessert- or table-spoonful doses, repeated every three to eight hours. Dr. Robinson points out that it is an error to give cardiac tonics in large doses. Small doses frequently repeated are more effective. He also deprecates the indiscriminate combining of a large number of drugs on the "shot-gun" principle. Whenever an attempt is made to give power too suddenly to an already overtaxed or enfeebled heart the danger is that of overstepping the mark, of bringing about cardiac over-stimulation, followed by failure and the liability therewith of a fatal termination. Cardiac slowness (bradycardia) is often an indication of intra-cardiac changes or may be the consequence of a gouty diathesis or toxæmia, and in the latter case the use of suitable eliminative remedies (lithia, piperazine, and restriction of diet containing urates) is attended with excellent results. He also contends that torpidity of the liver is often a primary factor in this undue slowness of cardiac action, and when other indications exist pointing in this direction, small doses of calomel and soda, or grey powder, repeated a few times during the course of a week or fortnight will often bring about great improvement. Where a long-continued course of treatment is indicated it is well to abandon the use of mercurial preparations and to use instead small and frequent doses of podophyllin, ipecacuanha, rhubarb, and soda. After such a course senile hearts are often practically rejuvenated, for a time at least, and enter upon a new lease of life. In gouty cases and in those where symptoms of angina may be present he advises also the use of Contrexéville water. He mentions several cases in which the gouty condition of the blood has been favourably modified in a striking manner by the use of Contrexéville water for some weeks, and states that the elimination of uric acid from the economy by its action seems at times exceptionally great.

VACCINATION LEGISLATION: A BAD POINT.

How many points of law have been raised and argued by the opponents of vaccination since the Act of 1867 was passed it would be impossible to reckon or even to estimate. Considerable ingenuity has been expended on them; some have been good, some indifferent, and some bad, while to the last group, the one upon which the Divisional Court was asked to rule in "Over *v.* Harwood" on the 26th ult., must beyond doubt be assigned. An order had been made under the thirty-first section of the Act, requiring the defendant to have his child vaccinated. In order to prove that the order had not been complied with the vaccination officer deposed that he had not received any certificate of successful vaccination. Six Surrey justices had been satisfied on this evidence that their order had not been obeyed, but had been induced to state a case in order that a learned counsel might argue in the High Court of Justice that evidence of no notification was not evidence of no vaccination. Mr. Justice Channell pointed out that the absolute proof of a negative by direct evidence is not always possible, and that recourse must sometimes be had to presumption, some evidence being given upon which that presumption may be based. He added that the law provides that vaccination shall not only be performed but notified and that if there had been no notification in the case before the court someone had neglected a duty. He therefore was of opinion that the absence of notification was *primâ facie* evidence that the child had not been vaccinated, and that if the magistrates were satisfied and required no further proof the court would not interfere with their discretion. It is not easy to see what the anti-vaccinationists responsible for such an appeal expected to gain by it. They could hardly have

expected that vaccination officers would in future be compelled to produce the child or some one who had examined the child, which would be the best way of proving the case if it were possible to do it, and they must have known that it would be clear to everyone that no injustice could possibly arise from the evidence of non-notification being accepted, because if the natural inference were incorrect it could, and of course would, at once be rebutted by direct evidence that the child had in fact been vaccinated, in which case the omission to notify according to law would still remain. The appeal, therefore, was one in which there was no prospect of success, while no grievance could arise as a consequence of its failure.

THE INFLUENCE OF VARIOUS STIMULI ON CILIARY MOTION.

NUMEROUS essays on cilia, their structure and motion, have appeared since the researches of Professor Sharpey were first published in the "Cyclopædia of Anatomy and Physiology" about the year 1836 and the latest one is written by Dr. Bergel and published in the January number of Pflüger's *Archiv*. For his material, instead of scraping off as usual the epithelial cells of the pharynx of the frog, he injects subcutaneously into that animal a centimetre of a 1 per cent. solution of hydrochlorate of pilocarpine, or the same quantity of a ½ per cent. solution of curara, and finds in the course of a few hours that a considerable number of ciliated corpuscles float in the secretion that accumulates in the throat. He proceeds to point out that as ciliary movements can be seen in these corpuscles after the lapse of two days from the death of the animal there can be no question of their entire independence of the nervous system. The motor centre, if the expression may be allowed, must be in the cell itself. On examination of the secretion not only groups of cells may be seen with the cilia in action, but also rounded bodies that appear to be the outer portion of the protoplasm of the cells crowned with cilia particles which have thrown off the cell-wall and are therefore destitute of an investing membrane. As a rule the larger the fragment of the protoplasm the shorter are the cilia, and *vice versâ*. Those fragments which possess the longest cilia are best adapted for observation and the activity of the movement of their cilia may be followed as it gradually dies out until there are only two or three complete vibrations in the second; even then it may be seen that the cilia on each fragment of protoplasm do not vibrate simultaneously but succeed each other in an orderly and successive manner. The forward stroke of each cilium is more sudden and vigorous than the return stroke, and in both movements the cilium is S shaped or undulatory in form. As the protoplasmic store of reserve force fails the cilia one after another cease to move till one alone remains in action; and so again if a cell with resting cilia be stimulated first one and then others begin to vibrate till all, it may be, are brought into action. In regard to the effects of stimuli of various kinds on the detached masses of protoplasm with cilia it was observed that when the movements of the latter had become slow the contact of a blood corpuscle or the cilium of another cell immediately caused them to become more frequent, a response to mechanical stimulation that is clearly of importance under normal conditions in promoting the movement of particles of dust in the respiratory passages outwards and in hastening the onward movement of the egg in the oviduct. In regard to the effects of heat it appeared that no recovery of motion took place if the cilia were perfectly quiescent, but if they were still vibrating the movements became more and more vigorous till a temperature of 95° F. was reached, after which they gradually diminished till at a temperature of 108° F. they entirely ceased. Dr. Bergel next proceeded to experiment on the influence of the access and withdrawal of light on ciliary motion, and found that as the light was reduced the movements of the cilia became slower and feebler and were ultimately arrested. If they were previously moving energetically the time elapsing before arrest occurred might be as much as three-quarters of an hour, but if feebly then in a much shorter time, perhaps not exceeding from four to eight minutes. If after complete arrest a bright light were thrown on the stage of the microscope a latent period elapsed (sometimes lasting as long as two minutes) and the movements of the cilia recommenced, some beginning to move earlier than others and sometimes resting for a moment or two as if a gathering up of force were required for their full play. When the alternation of light and darkness was frequently repeated the corpuscles with their cilia appeared to become exhausted and failed to recover themselves completely. An explanation of the stimulating influence of light is offered by Dr. Bergel who suggests that light promotes oxidation which again increases the production of heat which undergoes conversion into work. In this respect these rudimentary organisms agree with what has been observed in frogs by Moleschott and in rabbits by Pflüger and von Platin. When the nerve stores of the protoplasmic masses are used up no more oxygen can be absorbed and the cilia cease to respond to the influence of light. Lastly, in regard to the stimulus of electricity it appeared that in particles with completely motionless cilia feeble currents failed to excite any movement, but stronger ones caused after a latent period of some duration a few cilia to move, then more until all were in action; on breaking the current the motion continued for some time and then gradually ceased. Excitation by means of electricity of active moving cilia gave no results from which any positive conclusions could be drawn.

PARIS CONGRESSES AND PARIS HOTELS.

THE Committee of Organisation for the International Congress of Medical Deontology or Medical Ethics have just issued a circular concerning the question of hotel accommodation for the intending members of the Congress. They urge that no time should be lost in securing rooms, and enclose the circulars of four French agencies which on former similar occasions have given satisfaction to members of scientific congresses. The question, however, for us to decide is whether as members of the British public we do not exercise a better control over English agencies. In any case, ephemeral agencies started merely in view of the Exhibition should be approached with some caution. The safest rule to observe is to resort to those firms which have a reputation to maintain, and that, too, among the British public. This observation does not imply a condemnation of French agencies because in some cases, and perhaps unfairly, French firms give themselves more trouble to please English patrons than their own countrymen. This is notably the case with regard to the *Messageries Maritimes*. The English passengers who travel in these French steamers to India, the Far East, and Australia are, we have been assured by experienced travellers, treated with more deference and consideration than are the French passengers. We do not, of course, flatter ourselves that this is done from any other motive than that of competition against the English lines, but, still, the fact remains. Whether the same partiality will be shown by French travelling or tourist agencies we are not able to say, but of one thing we are quite certain. The hotels mainly frequented by the English and the Americans are the dearest, the cleanest, but the most unpleasant on the continent. The waiters, while expecting much larger gratuities, are not always attentive or civil, and the cooking is entirely ruined by the unappreciativeness of the British and the Americans. The experienced continental traveller of whatever nationality will always give

such hotels a wide berth. As the French agencies are patronised mainly by French people, their hotels are likely to be inferior from the sanitary point of view and superior from every other point of view; more especially are they likely to be cheaper. For instance, one agency undertakes to provide lunch, dinner, and room for 10*s.* a day. Another agency charges 12*s.* a day, but this includes coffee and rolls in the early morning and wine at meals. Before, however, venturing to say more on this question and assuming the responsibility of making any definite recommendation, our Special Correspondent, who will deal with the Paris Exhibition and the scientific congresses connected therewith, will make inquiries on the spot, visit some of the hotels, and report.

DIPHTHERIA STATISTICS IN NEW YORK.

WE are indebted to a correspondent for the following statistics of diphtheria in New York City during the semester January June inclusive, 1899. The information will be read with interest in connexion with a paragraph in our New York correspondent's letter in THE LANCET of Jan. 13th (p. 138). The figures denote total cases under all treatments (serum of all makes and no serum).

TABLE I.

Disease.	Cases reported.	Deaths.	Percentage of mortality.
Diphtheria	4789	780	16·3
Croup	315	154	48·8
Total	5104	934	18·3

TABLE II.—*Totals under Purview of the Department of Health and Treated with the Serum of its own Manufacture after Bacteriological Diagnosis.*

Cases determined true diphtheria (Klebs-Löffler bacillus)	2468
Deaths	780
Percentage mortality	31·2

Note.—These sums are too small by the figures for the week ending Feb. 15th, wanting in the official city record.

With respect to the difference in diphtheria mortality as between the pre-antitoxin and the post-antitoxin periods the letter before us states that the line of division is almost exactly Jan. 1st, 1895, and the writer continues as follows:—"I have recognised the importance of this point, but I have omitted the figures for the following reasons. Diphtheria statistics of the old New York City and up to Jan. 1st, 1898, cover only Manhattan Island and the annexed northern (Westchester) territory in the present city limits, or bills of mortality, the boroughs of Manhattan and the Bronx. And the figures before about 1880 refer only to the present borough of Manhattan. Since that division period the bills of mortality of that which is known as New York add to the present boroughs of Manhattan and the Bronx the old city of Brooklyn (for six preceding years coterminous with the county of Kings and before Jan. 1st, 1882, distinct entities), the county of Richmond, the present borough of Queens, which comprises the former municipality of Long Island City and a major fraction of the old county of Queens. I am convinced that it is absolutely impossible to establish figures for the comparison of the present area of New York City with the same territory before the consolidation which went into effect on Jan. 1st, 1898. This would involve the study of the following municipalities, Manhattan and the Bronx, Brooklyn (which for six years includes the outlying county of Kings and before that time excludes the county), the rural county of Richmond (Staten Island is geographically coterminous), Long Island City, and a portion of the county of Queens. Out of these elements it might be possible to secure somewhat accurate figures of Manhattan Island for many years, of Manhattan and the Bronx for 16 years, of Brooklyn for many years, of the old county of Kings for a few years, of the county of Richmond poor accounts for a few years, while, lumping Long Island City and a portion of Queens county, it would be impossible to establish any figures for these at all. Since Jan. 1st, 1898, the city of New York represents four times the area and double the population of what it meant before that date, and because of the many complications it is impossible to establish comparable figures. As you glance over these lines you may arrive at a conclusion, though I do not deny that my explanation is involved and complicated. Yet it is as clear as crystal in comparison with the tangled data into which it would be necessary to plunge to establish comparative figures before and after Jan. 1st, 1898."

ANTONIO MACEO'S SKULL.

THE *Revista de Medicina y Cirugía* of Havana publishes an "anthropological study," by Dr. Montalvo, Dr. de la Torre, and Dr. Montane, of the skull of the Cuban patriot, Antonio Maceo. The most noteworthy point is the existence of an interparietal, or, as it is sometimes termed, an "inca" bone, from the theory that it was universal amongst, and distinctive of, the old Peruvian race. This, however, was shown by Anoutchine[1] to be erroneous, for after examining many thousands of skulls in various museums he found the bone in only 6·8 per cent. in Peruvians, in 1·5 per cent. in negroes, and in 1·3 per cent. in Americans. Maceo was, of course, of mixed race. The general character of the cranium approximates to that of the white race and indicates a man of remarkable capacity. The rest of the skeleton inclines more to the negro type and shows that he must have been a man of Herculean strength.

URIC ACID AND LEUCOCYTOSIS.

IN an article on the excretion of uric acid with special reference to its connexion with leucocytosis, Dr. Carstairs C. Douglas of Glasgow published in the January number of the *Edinburgh Medical Journal* the results of 97 simultaneous quantitative determinations of uric acid and leucocytes made on seven persons in good general health (one of them pregnant) and 35 patients suffering from various diseases. In the course of a short summary of recent views regarding the origin of uric acid within the body he says that the theory of uric acid formation which has awakened the greatest amount of interest of late years, and which is apparently supported by many clinical and experimental facts, is that associated with the name of Horbaczewski, who holds that uric acid is derived in the body from the disintegration of proteids containing nuclein, notably from the leucocytes. Objections to this theory have, however, not been wanting. Richter, for instance, argues that, according to Horbaczewski, the maximum excretion of uric acid after food corresponds with the maximum number of leucocytes, whereas it should really follow the latter if due to a breaking down. Again, it has been pointed out that, if the uric acid be due to disintegration of leucocytes, in cases where the former is increased the phosphoric acid excretion ought also to be augmented, but it has in reality been found that exactly the converse may take place. From his determinations of uric acid and leucocytes Dr. Douglas concludes that on the whole there is a discrepancy between the amount of uric acid thrown off from the body and the number of leucocytes. No doubt there are striking instances in which

[1] Revue d'Anthropologie, 1882.

there appears to be a marked parallelism between the two; but on an equal number of occasions the converse can be shown to hold true. That nuclein containing tissues on ingestion may increase the amount of uric acid excreted is proved by the effect of the administration of nuclein and of thymus, but the observations which he has made do not support the view that normally the source of uric acid is to be found in the nuclein of the leucocytes. His analyses showed among other things (1) that uric acid varies much less with diet than urea does, and (2) that in prescribing a diet for the gouty it is inadvisable to order vegetables promiscuously, as is too often done, but those which are poor in proteid ought to be selected, and sweetbread and similar tissues rich in nuclein ought to be rigorously excluded.

MEDICAL MATTERS IN RANGOON.

THINGS do not seem to have been working well of late in the small medical world of Rangoon, according to the *Rangoon Gazette*, in its recent reports of proceedings connected with the Dufferin Hospital and the General Hospital of that place. We find it difficult to give a *précis* of the facts within a reasonably short compass. As regards the Dufferin Hospital, it appears that in 1885 it was determined that the best method, as far as Burma was concerned, of assisting the Countess of Dufferin in attaining her object by the establishment of a national association for providing female medical aid to the women of India was to teach some Burmese women something of scientific midwifery, that having been found to be one of the most pressing practical requirements of the native population. The Rangoon Dufferin Maternity Hospital is the only hospital in Burma largely supported by voluntary contributions and it was established for the purpose of affording opportunities for the practical instruction of Burmese women in midwifery. Sufficient funds have been collected to build a larger and better hospital than that which formerly existed. On the opening of this new institution the central committee in India demanded that a lady doctor with an English qualification should be placed in charge with leave to pursue private practice. This has been done, but contrary, it is alleged, to the advice of the provincial medical authorities. The consequence has been that the former lady medical officer, who had considerable experience and was a fluent teacher in the Burmese language, has been replaced by a lady with diplomas of a higher grade, but who is said to be unacquainted with Burmese. Finally, proposals from the central committee in India have been adopted by which the services of the honorary medical officers of the hospital have been dispensed with and the institution has been, or is to be, placed under the civil surgeon of the station. It is alleged that the proposals of the central committee in India have arisen from an entire misapprehension and ignorance of the peculiar local conditions which the institution as hitherto conducted has very satisfactorily met, and a public memorial is about to be presented to the Viceroy of India asking for an inquiry and protesting against the action taken by the Lieutenant-Governor in the matter. The small hospital which originally existed at Rangoon, it may be remarked, is alleged to have been successfully carried on and was largely wanted by the Burmese women. A Dufferin Hospital in India is understood to be for all diseases which are, for religious and caste reasons, to be treated exclusively by lady doctors, but the hospital at Rangoon is a maternity and gynæcological hospital only and the Burmese women are notoriously not affected by any caste or social restrictions which affect Indian races and it is quite customary for them to consult and receive treatment at the hands of the male sex. As the matter stands it seems to us to turn upon a question of what is best and most advantageous for the native community, for the benefit of whom the institution exists, and we should regret to learn that the rules of the Dufferin Association were prohibitory of what has been hitherto pursued with presumably manifest advantage to those mainly concerned. The matter seems to require further attention on the part of those who have the requisite authority to give it fair and impartial consideration so as to arrive at that conclusion which is best for the interests of the native population. As regards the General Hospital at Rangoon it appears, according to an article in the *Rangoon Gazette* of Dec. 29th, 1899, that among other matters considered at a meeting of the hospital sub-committee, a report by Colonel Little, I.M.S., Inspector-General, who had inspected the hospital on Nov. 20th, 1899, came under notice. The Inspector-General evidently found a good many points which he regarded as far from satisfactory, as will be seen from the following quotation from our contemporary:—

"The present quarters for menial servants are too crowded and too close to the main buildings. These, together with the contagious disease ward and the servants' latrine, should be removed to some distance from the hospital well apart from other buildings. ... The hospital affords accommodation for 461 beds. The daily average indoor attendance is 307.... The nursing staff appeared to me inadequate for the requirements of this large hospital. ... The superintendent drew attention to the necessity for a hot water service laid on to the hospital, a linen room, a dhobie room, and a disinfecting and sterilising room. The municipality, I believe, are prepared to supply them; they are essential to the proper working of the hospital on modern principles. ... Two medical officers, one resident medical officer, two assistant surgeons, and eight hospital assistants are the staff for this large hospital of 461 beds with a daily average attendance of 307 patients. This is a weak staff. ... The senior surgeon has office duties to perform and other administrative work which should fully occupy his time. The junior civil surgeon is in charge of police cases, including post-mortems, and of the contagious disease hospital, in addition to his share of the ward work and operations. There is a good deal of useful operative surgery, and these cases require careful dressing daily on antiseptic principles, to which the house surgeon can scarcely give his personal attention in all cases, so that the dressing must be largely conducted by the hospital assistants, a class of men whose work is seldom other than unsatisfactory where aseptic surgery is concerned. I do not mean to disparage a very useful and hard-working body of men, but think their education and training is not such as to guarantee efficiency in the matter of aseptic surgery or an intelligent knowledge of the principles on which it is worked."

It is understood that a new hospital is to be constructed as soon as funds can be provided for the purpose.

A CASE OF COMPLETE NECROSIS OF ONE SIDE OF THE MANDIBLE.

AN interesting case of necrosis of the mandible is recorded in the current issue of the *Journal of the British Dental Association* by Mr. W. H. Dolamore. The patient, a boy, aged four years, was taken to the dental department of the London Hospital with a large swelling on the left side of the face. The swelling appeared five weeks previously and a lower deciduous molar was removed. The swelling, however, increased and at the time of being seen by Mr. Dolamore there was a profuse discharge of pus from the gum and the remaining left lower deciduous molar was loose, carious, and contained a septic pulp. The tooth and some necrosed bone were removed, but the discharge became more profuse in spite of local and general treatment. At the expiration of about five weeks the inner margin of the alveolus which had separated was removed. The necrotic process continued to spread. Some seven months subsequently in attempting to remove a loose fragment of bone the whole left half of the mandible including the ascending ramus was discovered

loose and was removed through the mouth. The patient made a rapid recovery and but little facial deformity resulted. The movement of the joint was perfectly normal and even during the separation of the sequestrum was fairly free, due to the fact that the disease stopped before it reached the articular cartilage. The necrosis seems to have been due to septic inflammation in connexion with the deciduous molars. The interesting features of the case seem to be the apparent freedom from general trouble from the constant swallowing of the discharge, the rapid and excellent recovery, and the removal without the aid of an external incision of so large a portion of the mandible.

CAMBRIDGE SUMMER SCHOOL OF MEDICINE.

THE success of this gathering in 1894 was so great that we understand it is in contemplation at Cambridge to renew the invitation to qualified medical men to visit the University. It is hoped that at about the end of June arrangements can be made at the laboratories to demonstrate to the visitors the latest advances in the medical sciences. The colleges are being approached in the hope that they will afford accommodation to a certain number of visitors as before at cost price. When the arrangements are complete due notice of them will be given.

THE LEGAL CONTROL OF PROSTITUTION IN THE UNITED STATES.

THE *Medical Record* of New York publishes a paper by Dr. S. Lustgarten of New York on the above subject. The paper was contributed to the Transactions of the International Conference for the Prevention of Syphilis and Venereal Diseases held in Brussels in September, 1899. The chief interest of the paper is in showing the almost complete absence of legislation in the United States to secure control over prostitution and the two great reasons for such absence. First, in the sovereignty of the individual states in dealing with such subjects for themselves and by themselves, and, secondly, the absence of any public feeling in the States on a large scale in favour of such legislation. There is only one instance in the history of the States of an attempt at legislation of this kind. The Missouri Legislature in 1872 enacted a law to regulate prostitution in the city of St. Louis. Though the law operated beneficially in the estimation of well-informed writers and physicians it only remained on the statute books of the State for about a year and it was repealed in dramatic style with popular demonstrations. Dr. Lustgarten points out that for any such legislation to be beneficial it must include all the states. Otherwise the effect is merely to drive prostitution to other states and cities.

THE SALE OF FOOD AND DRUGS ACT, 1900.

CIRCULARS similar to those issued some months ago by the Board of Agriculture in London have been issued by the Local Government Board in Edinburgh to the local authorites of Burghs in Scotland. It is pointed out that by Section 23 of the Act now in force all the powers and duties vested in or imposed upon the Secretary for Scotland in relation to the Sale of Food and Drugs Act are transferred to the Local Government Board in Edinburgh. The circulars contain much the same useful information as those which were issued by the Board of Agriculture in London and which were dealt with in an annotation in THE LANCET of Nov. 18th, 1899 (p. 1389). The better control over the manufacture and sale of margarine is the subject of an attached circular. The chief points to be noticed by the authorities who are entrusted with the carrying out of the purpose of the Act are as follows:—The power of the Board whether in Scotland or England of securing the execution and enforcement of the Act, the definition of food, the provision of more stringent fines, the enforcement of the Acts where negligence is evident, and the fact that it is imperative on every local authority now to appoint a public analyst without reference to a central authority.

THE NEW UNIVERSITY OF BIRMINGHAM.

THE charter and statutes for the government of the new University of Birmingham have been laid on the table of the House of Commons. Mr. Chamberlain is to be the first Chancellor. The Principal, who is to be appointed by the Crown, is not yet nominated. Mr. Bertram Coghill Alan Windle, M.A., M.D., D.Sc., F.R.S., has been appointed the first Dean of the Faculty of Medicine. Certain interesting questions arise out of these appointments as showing that the University is at length a reality. There is, for instance, the very interesting question, from a medical point of view, as to a representative upon the General Medical Council. In any case the medical profession may congratulate itself upon the election of so distinguished a teacher as Dr. Windle to the responsible post which he holds.

WE understand that the President of the Board of Agriculture has appointed a Departmental Committee to inquire and report as to what regulations may be made by the Board in regard to the standards of quality of milk and cream. The difficulty in connexion with proceedings taken under the Sale of Food and Drugs Act has been to differentiate exactly between abnormal milk or milk which has been watered or from which cream has been abstracted. It is to be hoped that the long-vexed question of what is and what is not genuine milk or cream may be decided by this committee by recommending a system of fair standards. Public analysts in particular will welcome the announcement of the appointment of this committee which will consist of the following gentlemen:—Lord Wenlock (chairman), Mr. George Barham, Mr. George Cowan, Major Patrick George Craigie, Mr. S. W. Farmer, Mr. Shirley Murphy, Professor Thorpe, and Mr. J. Augustus Voelcker. Mr. Robert Henry Rew (of the Board of Agriculture), will serve as secretary to the committee.

THE Odontological Society of Great Britain is prepared to receive applications for grants in aid of the furtherance of scientific research in connexion with dentistry. For further particulars application should be made to the Honorary Secretary, Scientific Research Sub-committee, Odontological Society, 40, Leicester-square, London, W.C.

THE subject for discussion at the annual clinical debate to be held by the Chelsea Clinical Society on March 13th and 20th is the Treatment of Rheumatism, with special reference to Prophylaxis and Cardiac Complications. The names of the speakers will be shortly announced.

Mr. R. Clement Lucas has been appointed by the Treasurer and Governors of Guy's Hospital, on the unanimous recommendation of his colleagues, to the lectureship on Surgery in the Medical School, rendered vacant by the resignation of Mr. N. Davies-Colley.

NEWPORT AND MONMOUTHSHIRE INFIRMARY.—At the annual meeting in connexion with the Newport Workmen's Infirmary Fund held on Jan. 24th under the presidency of the mayor it was stated that £1027 had been collected during 1899, being an increase of £212 as compared with the preceding year.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

(*Continued from p. 255.*)

WE gave last week a brief outline of the final report of Lord Llandaff's Commission on the London Water-supply. The recommendations which the Commissioners gave were, it may be remembered, that the metropolitan water companies' undertakings should be purchased and placed under the control of a Water Board and that it was unadvisable that the purchase should be effected by the London County Council. In order to obtain a clear idea of the reasons which led the Commissioners to come to the conclusion that the undertakings should not be purchased by the London County Council we reproduce a map which was prepared for the Balfour Commission and which appeared in their report, and was also reproduced in the first of the articles on the London water-supply which appeared in THE LANCET.[1] A mere glance at this map shows how small a part the county of London (which is represented by a shaded area) occupies in the larger area included under the term "Water London" (which is defined in the map by a dark line). It will be noticed that the area of the New River extends to the north of Ware and that that of the Kent Company spreads southwards beyond Westerham, while to the east and west Water London spreads to a considerable distance beyond the county of London itself. The Royal Commission had to consider the interests of the inhabitants of the whole of this vast area nor could they with justice ignore the opinions of the outside areas for the sake of a limited part of the district, for the good of the whole of which they were asked to give their advice with regard to the future supply of water. One of the questions, therefore, which the Commissioners had to consider was whether the undertakings should be acquired and managed by one or by several authorities, and they had to take into account the opinions expressed by the metropolitan counties who insisted that their supply should be altogether severed from that of London, both with regard to supply and distribution of water, if it were decided that the county of London should purchase the water companies' undertakings. The Commissioners therefore had to consider to what extent physical severance of the works and other property and sources of supply and the division thereof between different local authorities within the limits of supply were practicable and desirable. They found in the course of their inquiry that the area of supply of the metropolitan water companies included in the county of Middlesex alone 21 urban and rural district councils; that in the county of Surrey it included three boroughs and nine urban and rural district councils; that in the county of Essex it included one borough and 13 urban and rural district councils; that in Hertfordshire in included five urban and rural district councils; and that in Kent it included eight urban and rural district councils. It had not been suggested that it was desirable to divide the sources of supply and works of distribution between these 60 local authorities; that alternative therefore the Commissioners dismissed from serious consideration. On the other hand, it had been suggested that severance and division of the sources of supply might be effected between the six metropolitan counties which were included in the water area. The only witness, however, who attempted to formulate any scheme for dividing the sources of supply between the six counties was Sir Alexander Binnie. Assuming that the London County Council were to purchase the undertakings of the water companies he proposed a plan for the division of the supplies between the counties of London and Surrey and between London and Middlesex. In the case of Kent he suggested that the county of London should take those wells of the Kent Company which are in the county of London and buy in bulk from the county of Kent some undefined quantity of water produced by those wells of the Kent Company which are in the county of Kent and which the Commissioners say should primarily belong to that county. With regard to Hertfordshire the suggestion was that the county of London should buy and retain the existing sources of the New River and undertake not to draw any more water than is drawn at the present time or more than some quantity which might be afterwards agreed upon. With respect to the supplies at present given by the New River Company it was suggested by Sir Alexander Binnie that they should continue to be given by the county of London as a supplying authority, or that London should hand over to Hertfordshire a fixed quantity of water to be distributed by the authorities of that county. In the case of the county of Kent Sir Alexander Binnie did not offer any suggestion. The Commissioners report that the suggestions put forward by Sir Alexander Binnie negative the desirability and even the practicability of severing the sources of supply and works of distribution in the case of all the metropolitan counties. Sir Alexander said that as a water engineer he would not advise severance from an economical point of view in the administration of works and that the objections to severance and its cost would lead the outside authorities to take water in bulk from the county of London and that they should content themselves with distributing it in their own district. He gave it also as his opinion that should water be supplied in bulk from the county of London to the outlying authorities London, as the supplying authority, ought to be made responsible for giving an increased supply should it be necessary to do so in order to keep pace with the requirements of a growing population and that the county of London ought to be paid some small sum for working the business. On the other hand, if there were complete division of the sources of supply and the works of distribution the adjacent counties would in case of necessity have to provide themselves with new sources of supply as soon as the population had outgrown that which had been allotted to them in the partition. Sir Alexander Binnie had made no estimate as to the cost of the carrying out the work of partition. The Commissioners report that the scheme of partition in all its manifestations was too technical and complicated a matter for them to treat in detail and they therefore content themselves by pointing out as an example of the intricacy of any possible scheme the case of a suggested division of the works of supply between the counties of London and Surrey. In our report of the meetings of the Royal Commissioners the evidence on this subject was fully given, and here we need do no more than quote in the words of the Commissioners their brief *résumé* of the works which it would be necessary to carry out:—

> We must content ourselves with saying that the suggested division of works of supply and of distribution between the counties of London and Surrey would involve dividing reservoirs into two by embankments; leaving the outside county with only one main, and no alternative means of supply, dividing the engine power at different stations in some undefined way, with the consequence that the workmen of the two counties would have to use the same engine-house, with only one common steam-supply. Water intended for distribution in Surrey, and belonging to Surrey, would have to pass through reservoirs belonging to London, and pass out of the county of London again; mains used for distribution would have to be converted into pumping mains, and *vice versâ*; considerable works, such as reservoirs now laid out for the supply of several districts, would have to be applied to the use of one district; the workmen employed by London and Surrey respectively would have to work side by side and on the same premises, in filtering and sand-washing operations; the division of the engines and mains at Hampton could only be effected by handing over to Surrey three times as much engine-power and four times as much main capacity as the needs of the county required.

The Commissioners point out that Mr. Middleton gave it as his opinion that the present arrangements of the metropolitan water companies' undertakings were so intricate that practically it would be better to reconstruct the works altogether than to attempt to divide them, and he gave in detail the difficulties and inconveniences of dividing the pumping machinery, engines, boiler-power, and subsiding reservoirs at Molesey between the counties of London and Surrey, and the difficulty that would arise in apportioning filter-beds and the engines which pump the water. He also showed that there would be similar difficulties after the water had left the filter-beds, and in his opinion it would be better for Surrey to leave the present water undertakings to London and to supply themselves with water independently. The Commissioners recapitulate in some detail the evidence which was given on the difficulties of dividing the companies' present undertakings in such a way that the water should be divided between London and the outlying authorities. The evidence on which they dwell was reported at the time when it was given at the various sittings of the Commissioners,[2] and many of the facts were even then familiar to readers of THE LANCET, as they had already appeared in the articles which were given on the

[1] THE LANCET, Feb. 20th, 1897, p. 540.

[2] THE LANCET, Nov. 27th, 1897, et seq.

metropolitan water-supply.[3] For example, the Commissioners point out that the intakes, service reservoirs, and filter-beds of the East London Company are all outside the county of London. If, therefore, London bought the water of the company and supplied Essex with water in bulk it would be necessary to bring all the filtered water from outside London into London and send it again to Essex through a number of mains on all of which meters would have to be placed, while London would have to construct fresh service reservoirs for that part of London which was to be supplied from the present East London Company's sources. The New River Company's undertaking presented similar difficulties with regard to severance. Half their reservoirs are outside the county of London, their mains cross and re-cross the boundary 38 times along seven miles of boundary, and there are in addition numerous crossings of the service mains and service pipes. In the case of severance in order to enable London to give a supply in bulk to the outside authority all these pipes would have to be metred, unless at great expense many of the mains were relaid, or new ones put down.

Similar difficulties, the Commissioners point out, apply to the undertakings of the other companies. They report, therefore, that the system of supply in bulk is not only inconvenient and expensive but it shuts out the supplying authority from prospective increase of income arising in the district of supply. The price of the water so supplied would doubtless be fixed and if London were to supply in bulk at a fixed price the ratepayers of London would find themselves in a less satisfactory financial position than that which the eight present metropolitan water companies at present enjoy or in which a purchaser who took over the present system would possess if the administration did not require division. The Commissioners come to the conclusion that although severance of the works of supply and division of them between the councils of the six counties within the limits of supply is not actually impracticable it would be very difficult and highly undesirable. They report that the metropolitan counties appeared determined to insist on being altogether severed from London, both with regard to the supply of water and the distribution of it, should the county of London purchase the undertakings of the water companies. In the case of Middlesex the opinion frequently expressed by the Middlesex County Council was that no

The Administrative County of London is represented by the shaded area. The black line defines "Water London," the area of the Metropolitan water-supply. The shaded line defines the Metropolitan and City Police area.

[3] THE LANCET Special Commission on the Metropolitan Water-supply, Feb. 20th, 1897, et seq.

scheme would be acceptable which did not provide for the independent control by Middlesex of the distribution of the supply for Middlesex and the absolute non-interference with Middlesex either as to rating or otherwise. The Surrey County Council, supported by the various urban and rural district councils and parish councils of the county which would be affected by the change, is opposed to any scheme that would put Surrey under the control of the London County Council, and the Surrey County Council has always insisted upon having the sources of supply as well as the distribution of water in its own hands should the present arrangements be changed. The Kent County Council desires that the Kent Company shall be left to exist in its present state and wishes that arrangement to be permanent. There is no desire to buy the undertaking, but should it be purchased by the London County Council Kent demands to purchase its share both of the sources of supply and means of distribution, and the county of Kent objects to the London County Council having any power at all in that county. The County Council of Essex agrees to the purchase of the metropolitan water companies by the London County Council only on the terms that Essex shall have the supply and distribution of water in its own county. The feeling of Essex was neither in favour of nor against municipalisation of water-supply, but there was a very strong feeling that the London County Council should not have any power of control of the water in Essex. The county of Hertfordshire thinks that the New River Company and the East London Company already abstract more water from the county than they are entitled to either by charter or by statute. It opposes purchase by the London County Council because it thinks that that council would be inclined to abstract even more water than the present peccant companies. The county has no idea of buying the New River undertaking or any part of it. Very few supplies are given in the county by the New River Company.

The Commissioners attach great weight to the objections of the county authorities to being placed by purchase under the control of the London County Council in consequence of the large numerical proportion of the water-consuming population which is under the jurisdiction of those counties and not at present in any way under that of the London County Council. Even at the present time, the Commissioners point out, this population is between one-fifth and one-quarter of the whole population supplied by the water companies; it is increasing at a more rapid rate than the population of London proper; and if and when the population of Water London reaches 12,000,000 it is possible that the population of this outer ring, for which additional water may be wanted, may equal in number that of the administrative county of London. The Commissioners report that should the London County Council purchase the undertakings division of the works of supply must necessarily follow; this division is open to so much objection that it is practically inadmissible; therefore the London County Council should not be allowed to purchase the metropolitan water companies' undertakings.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on Jan. 26th, Dr. W. S. CHURCH, the President, being in the chair.

The following gentlemen having passed the required examination were admitted as Members:—Edwin Bramwell, M.B. Edin., Walter Langdon Brown, M.A., M.B. Cantab., Andrew Duncan, M.D. Lond., Charles Oliver Hawthorne, M.D. Glasg., Robert Jones, M.D. Lond., L.R.C.P., John MacLeod Hendrie MacLeod, M.A. St. And., M.D. Aberd., Clive Riviere, M.D. Lond., L.R.C.P., Alfred Ernest Russell, M.D. Lond., L.R.C.P., Alfred Walter Sikes, M.D. Lond., L.R.C.P., Lewis Albert Smith, M.B. Lond., L.R.C.P., and Ralph Harry Vincent, M.B. Durh., L.R.C.P. Licences to practise were granted to 112 gentlemen who had duly satisfied the examiners and Diplomas in Public Health were granted, conjointly with the Royal College of Surgeons of England, to 13 gentlemen.

The following communications were received:—1. From the Secretary of the Royal College of Surgeons of England (3), reporting certain proceedings of their Council. 2. From a Committee of the Local Government Board asking the College to appoint two representatives to give evidence on the question, How Far Certain Preservatives and Colouring Matters added to Food are Injurious to Health. The PRESIDENT suggested that Sir T. Lauder Brunton and Dr. G. Vivian Poore should be appointed and the proposal was adopted. 3. From Mr. Davies-Colley, resigning his appointment as Examiner in Surgery to the College owing to ill-health. The PRESIDENT expressed the regret felt by the College in accepting this resignation.

The PRESIDENT announced that Professor Clifford Allbutt had been selected as Harveian Orator; Dr. Archibald Garrod as Bradshaw Lecturer; and Dr. John Sykes, medical officer of health of St. Pancras, as Milroy Lecturer.

Dr. P. Frank, Sir William R. Gowers, Dr. T. Barlow, and Dr. Sidney Coupland were elected Councillors in the room of Dr. A. E. Sansom, Dr. Mitchell Bruce, Dr. W. H. Allchin, and Dr. Frederick Taylor, who retire by rotation.

Dr. Sidney Martin was elected a Member of the Laboratories Committee in the place of Dr. J. F. Payne.

On the motion of the Senior Censor (Dr. P. H. PYE-SMITH), seconded by the Registrar (Dr. E. LIVEING), it was resolved that the following words be substituted for those in the By-law commencing "may declare such Fellow" to the end—viz.:—

> May declare such Fellow not to be a Fellow or a Member of the College, or such Member not to be a Member of the College, or such Licentiate not to be a Licentiate, for a limited period of time or altogether as the College shall determine; and such Fellow, Member, or Licentiate shall forfeit all the rights and privileges which he does or may enjoy as a Fellow or as a Member or as a Licentiate as the case may be, either for such limited period of time or altogether as the College shall determine; and his name shall be expunged from the list of Fellows or from the list of Members or from the list of Licentiates, as the case may be, either for such limited time or altogether as the College shall determine.

A report, dated Nov. 20th, from the Committee on the Nomenclature of Diarrhœa was received, in which it was recommended that the term "epidemic enteritis" should be used as a synonym for epidemic diarrhœa and that the College should urge the entire disuse as synonyms of epidemic diarrhœa in medical certificates of death of such terms as "gastro-enteritis," "muco-enteritis," or "gastric catarrh."—After a discussion, in which Dr. William Hunter, Dr. Donald MacAlister, Dr. J. F. W. Tatham, Dr. J. F. Payne, Dr. R. J. Lee, and the President took part, the report was adopted.

Reports were also received and adopted from the representative of the College on the General Medical Council (Sir Dyce Duckworth), from the Finance Committee, from the Committee of Management, and from the Laboratories Committee. The report from the Committee of Management included the syllabus for the Diploma in Public Health, Part I. and Part II.; the recognition of Cooke's School of Anatomy as a place of instruction in anatomy and physiology for candidates referred at the second examination; the recognition of the course of operative surgery at Cooke's School of Anatomy; and the recommendation that Cornell University should be added to the list of institutions recognised by the board at which the whole curriculum of professional study may be completed and where graduates in medicine are admissible to the final examination.

A list of books and other publications presented to the library during the past quarter was received and thanks were returned to the donors. Amongst the books were 23 medical works of the seventeenth and eighteenth centuries, presented by the Governor of the Bedford General Infirmary; a splendidly bound copy of "Cooper's Anatomy," sixteenth and seventeenth centuries, presented by Dr. Coates of Bath; an interesting MS. of the seventeenth century, containing a collection of "Remedies for the Universall Parts of the Body," presented by Dr. Poore; three old seventeenth-century medical works presented by Dr. Stevenson; and Sir Thomas Browne's "Christian Morals," presented by Dr. Osler.

THE YARROW CONVALESCENT HOME. — The trustees of the Yarrow Convalescent Home desire it to be made known among the medical profession that during the winter months accommodation is provided for a limited number of children requiring active treatment and a lengthened stay is granted when there is a prospect of a permanent benefit. This home has placed at the disposal of the Officers' Families Fund 30 beds for the reception of any convalescent children of officers who have either been killed or wounded in the present South African war.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Chelmsford and Maldon Rural Districts.—Dr. J. C. Thresh, in addition to holding the post of medical officer of health of the county of Essex, is also medical officer of health of the above two districts, and in this latter capacity he has set an excellent example by the prompt issue of his annual reports for the year 1899. They are the first which we have received. In both these districts there is apparently some discontent with the building by-laws, which are regarded by certain persons as being too stringent, and in the Chelmsford district a committee has been appointed to inquire into the matter. The present by-laws, it is alleged, inhibit or totally prevent the erection of agricultural labourers' cottages. As regards the question of the housing of the working classes in the Maldon Rural District Dr. Thresh thinks the only remedy to be the adoption of Part III. of the Housing of the Working Classes Act and he furnishes figures which will, we trust, tempt the council to try the experiment. Dr. Thresh, however, expresses the opinion that the Act referred to requires simplification in the direction of affording facilities for acquiring money more cheaply and extending its repayment over 50 years. It is useless, he observes, to condemn houses in cases where the displaced tenants have no other houses to which they can betake themselves. In Essex the movements of "holiday children" from London have to be carefully watched, and Dr. Thresh reports that he was able last year to prevent children being sent to a village where scarlet fever was prevalent. He suggests that associations sending children into the country should previously notify their intentions to the medical officer of health of the district to which the children are to be sent. An inquiry has recently been made in the Chelmsford and Maldon districts into the distribution and behaviour of cancer since 1671. Dr. Thresh placed his books at the disposal of Dr. G. M. Scott of Witham who undertook the investigation. The report is, Dr. Thresh tells us, shortly to be published in full, but he furnishes us with the following table and the conclusions at which Dr. Scott has arrived.

Deaths from Cancer per 1000 of the Population.

—	1871-80		1881-90		1891-1900	
	Total deaths.	Deaths per 1000 population.	Total deaths.	Deaths per 1000 population.	Total deaths.	Deaths per 1000 population.
Males	93	3·2	135	4·7	204	7·0
Females	181	6·4	220	7·7	244	8·4
Total...	274	4·8	355	6·2	448	7·7

1. During the earlier part of the period under consideration the death certification was wanting in detail.
2. The increase in the number of deaths certified as being due to cancer is real in part, but is chiefly due to greater accuracy in diagnosis.
3. On the average there are proportionately fewer cancer deaths in Essex than in England as a whole; fewer in the area under consideration than in the county of Essex; and fewer in the Maldon than in the Chelmsford Union.
4. A low mortality may exist under the most diverse physical and sanitary conditions.
5. A low cancer rate exists near those parts which are characterised by muddy foreshore and salt-water creeks.
6. In some parts having a high mortality from cancer the subsoil water lies near the surface. (This condition seems to be more common than any other, but there is one very notable exception—Tollesbury.)
7. In those parts which lie on the banks of rivers there is no special prevalence of the disease.

Another table furnishes the rates in the several parishes of the districts, and we look forward to the full report to tell us in what manner the age distribution of the population has had an influence on the different rates.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6790 births and 5025 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 30·9, 29·1, and 24·9 per 1000 in the three preceding weeks, further declined to 22·6 last week. In London the rate was 22·2 per 1000, while it averaged 22·8 in the 32 provincial towns. The lowest death-rates in these towns were 8·9 in Cardiff, 10·7 in Croydon, 14·7 in Birkenhead, and 15·3 in Swansea; the highest rates were 29·5 in Liverpool, 29·7 in Wolverhampton, 30·1 in Sunderland, and 30·7 in Preston. The 5025 deaths in these towns included 428 which were referred to the principal zymotic diseases, against numbers decreasing from 578 to 443 in the five preceding weeks; of these 123 resulted from measles, 99 from whooping-cough, 94 from diphtheria, 43 from diarrhœa, 35 from "fever" (principally enteric), 33 from scarlet fever, and one from small-pox. No death from any of these diseases occurred in Gateshead; in the other towns they caused the lowest death-rates in Croydon, Cardiff, Birkenhead, and Newcastle, and the highest rates in Salford, Burnley, Preston, and Sheffield. The greatest mortality from measles occurred in West Ham, Salford, Preston, Bradford, and Hull; from scarlet fever in Burnley and Preston; and from whooping-cough in Birmingham, Liverpool, Salford, Preston, and Leeds. The mortality from "fever" showed no marked excess in any of the large towns. The 94 deaths from diphtheria included 37 in London, 26 in Sheffield, four in Leeds, and four in Liverpool. One fatal case of small-pox was registered last week in Hull, but not one in any other of the 33 large towns. There were 24 cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Saturday last, Jan. 27th, against numbers increasing from five to 21 on the five preceding Saturdays; four new cases were admitted during the week, against one, 10, and five in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2287, against numbers decreasing from 3578 to 2441 at the end of the 10 preceding weeks; 190 new cases were admitted during the week, against 186, 180, and 207 in the three preceding weeks. Influenza was certified as the primary cause of 152 deaths in London last week. The deaths referred to diseases of the respiratory organs in London, which had been 1221, 994, and 728 in the three preceding weeks, further declined to 490 last week, and were 70 below the corrected average. The causes of 62, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Newcastle, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Sheffield, Hull, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·0 and 23·3 per 1000 in the two preceding weeks, further rose to 23·4 during the week ending Jan. 27th, and was 0·8 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·2 in Leith and 15·9 in Paisley to 26·7 in Dundee and 27·6 in Aberdeen. The 723 deaths in these towns included 32 which were referred to measles, 23 to diarrhœa, eight to scarlet fever, eight to whooping-cough, seven to diphtheria, and three to "fever." In all 81 deaths resulted from these principal zymotic diseases, against 64, 65, and 6 in the three preceding weeks. These 81 deaths were equal to an annual rate of 2·6 per 1000, which was 0·7 above the mean rate last week from the same diseases in the 33 large English towns. The 32 fatal cases of measles corresponded with the number in the preceding week, and included 19 in Glasgow, eight in Dundee, two in Greenock, and two in Perth. The deaths from diarrhœa, which had declined from 17 to seven in the four preceding weeks, rose again last week to 23, of which 13 occurred in Glasgow, three in Dundee, and three in Aberdeen. The fatal cases of scarlet fever, which had been four and eight in the two preceding weeks, were again eight last week, and included

six in Glasgow. Of the eight deaths from whooping-cough, which were equal to the number registered in the preceding week, five occurred in Glasgow and two in Edinburgh. The fatal cases of diphtheria, which had been three, five, and seven in the three preceding weeks, numbered seven last week, and included three in Glasgow and two in Dundee. The three deaths from "fever," all of which were registered in Glasgow, showed a decline of three from the number in each of the two preceding weeks. The deaths from diseases of the respiratory organs in these towns, which had declined from 253 to 198 in the four preceding weeks, further decreased to 172 last week, but were 11 above the number in the corresponding period of last year. The causes of 20, or nearly 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 50·3, 49·4, and 44·0 per 1000 in the three preceding weeks, further declined to 38·6 during the week ending Jan. 27th. During the past four weeks the death-rate in the city has averaged 45·6 per 1000, the rate during the same period being 29·9 in London and 22·2 in Edinburgh. The 259 deaths registered in Dublin during the week under notice were 36 below the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against 31 and 22 in the two preceding weeks; of these five resulted from measles, three from whooping-cough, one from diphtheria, one from "fever," and not one either from small-pox, from scarlet fever, or from diarrhœa. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rates during the same period being 1·8 in London and 0·9 in Edinburgh. The fatal cases of measles, which had been 18 and nine in the two preceding weeks, further declined last week to five. The deaths referred to whooping-cough, which had been one and three in the two preceding weeks, were again three last week. The mortality both from diphtheria and from "fever" showed a decline from that recorded in recent weeks. The 259 deaths in Dublin last week included 32 of infants under one year of age and 91 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a decline. Seven inquest cases and two deaths from violence were registered, and 91, or more than a third, of the deaths occurred in public institutions. The causes of 15, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Staff-Surgeon: James L. Smith to the *Ocean*. Surgeons: Edward C. Sawdy to the *Ocean;* William Hackett to the *Pique;* Thomas D. Halahan to Plymouth Hospital; Kenneth H. Jones to the *Pembroke;* Henry E. Raper to the *Repulse;* and James M. G. Swainson to the *Trafalgar*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. Healy, retired pay, proceeds to Cork for duty. Captain P. Evans has arrived at Portsmouth for duty. Major H. B. Mathias is selected for the charge of the Mosely Hospital for South Africa. Lieutenant-Colonel E. J. Fairland, A.M.S., retired pay, joins the Home District for temporary duty as a Recruiting Medical Officer, and Majors D. Stiell and R. H. Clement join at Woolwich.

THE CITY OF LONDON IMPERIAL VOLUNTEERS.

Surgeon-Captain R. R. Sleman, 20th Middlesex Volunteer Rifle Corps, to be Medical Officer, with the temporary rank of Captain. Surgeon-Captain A. Thorne, 2nd Middlesex Volunteer Artillery, to be Medical Officer, with the temporary rank of Captain. Surgeon-Captain E. V. St. V. Ryan, 16th Middlesex Volunteer Rifle Corps, to be Medical Officer, with the temporary rank of Captain.

VOLUNTEER CORPS.

Artillery: 1st Cheshire and Carnarvonshire: Surgeon-Lieutenant W. G. Owen resigns his commission. *Rifle:* 1st Volunteer Battalion the Queen's Own (Royal West Surrey Regiment): Thomas Francis Devane, to be Surgeon-Lieutenant. 1st Cadet Battalion the Queen's Royal West Surrey Regiment: A. C. Elliman to be Acting Surgeon. 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: Hubert Williams to be Surgeon-Lieutenant. 1st Tower Hamlets: Surgeon-Captain J. P. Simpson resigns his commission.

TRANSVAAL WAR NOTES.

It is expected that the *personnel* of the Imperial Yeomanry Hospital will start next week or early the week following for South Africa. Huts for 200 beds, it is hoped, will be ready when the hospital and staff arrive at Cape Town.

Mr. A. Mosely, a Bristolian living in London, has presented a field hospital, which is to be called the Princess Christian Hospital, to the War Office. It will contain 100 beds and be stationed in the neighbourhood of Cape Town. Major H. B. Mathias, R.A.M.C., will be at the head of the five surgeons employed, and Mr. J. Paul Bush will be placed in charge of the civil section. Nurse Lawrence, daughter of Judge Lawrence of Cape Town, with four sisters, will take over the nursing department. Six non-commissioned officers and 24 ordnance men will complete the staff.

Mr. L. Echenard-Neuschwander has placed at the disposal of convalescent English officers returning from South Africa four rooms free of expense at the Grand Hôtel du Louvre et de la Paix at Marseilles. This offer has received the approval of the War Office.

Captain C. Dalton, R.A.M.C., was severely wounded at the operations at Chieveley on Jan. 23rd.

In a despatch from Modder river dated Dec. 1st referring to the operations there on Nov. 28th Lord Methuen says:—"Again I call attention to the splendid hospital arrangements, for at 4.45 P.M. on the day after the fight all my wounded were on their way to Cape Town. I am glad to have been slightly wounded, because in no other way could I have learnt the care taken of the wounded, and there was nothing officer or private soldier required that was not provided at once, and the medical officers never tired in their endeavour to alleviate suffering."

THE ROYAL ARMY MEDICAL CORPS IN EGYPT.

The *London Gazette* of Jan. 30th contains a despatch, with enclosures, from Lord Kitchener of Khartoum to the Under-Secretary of State for War, London. In an enclosure from Colonel Sir F. R. Wingate, commanding troops on the White Nile, dated Fachi Shoya, Nov. 25th, 1899, Colonel Wingate says: "Lieutenant Stallard (Royal Army Medical Corps) was in charge of the medical arrangements, and was ably assisted by Lieutenant Nickerson (Royal Army Medical Corps). These officers did all that was possible, not only to alleviate the sufferings of our wounded, but were also indefatigable in attending to the Dervish wounded, large numbers of whom passed through their hands." Lord Kitchener in his despatch says, "I freely endorse Colonel Wingate's remarks on the good services of the officers and men he has mentioned."

MALARIA AND BLOOD PARASITES.

In the *Archives de Médecine Navale* for November, 1899, Dr. H. Gros has a long and exhaustive review of Dr. Hans Ziemann's work on blood parasites in malaria.[1] "Although we think it is our duty to recommend the perusal of this *brochure* to all who take an interest in the highly important question of impaludism," says the reviewer in his exordium, "we shall nevertheless give a very complete *résumé* of M. Hans Ziemann's work. In it the author expounds the results of his own researches, which refer to 254 cases of malaria observed in Germany, in Italy, and under the tropics. The amount of research hereby indicated is most creditable and if we feel bound to differ with some of the conclusions arrived at by the author it is because they are often opposed to those of the Italian observers and also to those of M. Laveran, whose competence in the matter is indisputable." Dr. Ziemann has divided his subject into 17 sections, as follows: 1. A brief historical sketch in which the views of Golgi, Mannaberg, and the Italian school are given. 2. Classification of the malarial parasites. Dr. Ziemann accepts the following varieties: (*a*) the parasites of benign quartan ague; (*b*) of benign tertian ague; (*c*) of quotidian ague, malignant tertian and perhaps quartan, and irregular,

[1] Ueber Malaria und andere Blutparasiten, nebst Anhang, eine wirksame Methode der Chromatin und Blutfarbung. Fischer, Jena, 1898.

capable of producing crescentic bodies. 3. General morphology and biology of the malarial parasites. 4. The parasite of quartan ague. 5. The parasites of tertian ague. 6. The parasites of æstivo-autumnal fever (pernicious fever of the tropics). 7. Sterile forms. 8. The clinical importance of searching for the parasites in tropical fevers. 9. The effects of various conditions and substances on malarial parasites. 10. Life of the parasites outside the human body and modes of entry therein. 11. Incubation. 12. The place in the animal kingdom occupied by the malarial parasites. 13 Researches regarding blood parasites in the cattle fever of Texas. 14. Parasites in the blood of birds. 15. Blood parasites in the owl (*Athene noctua*). 16. Parasites in cold-blooded animals. 17. Denying the existence of cytamœba bacterifera of Labbé, which the author believes to be an ordinary bacterium. Dr. Ziemann concludes with a description of the methods of colouration employed by him, and also gives various hints as to the best way of obtaining fine preparations. His work is well illustrated with engravings and photographic reproductions.

ARMY MEDICAL SCHOOL, NETLEY.

The seventy-ninth session of the Army Medical School, Netley, was brought to a close on Jan. 30th. In consequence of the war in South Africa there was no public distribution of prizes. It will be remembered that the officers of the Royal Army Medical Corps passed out of the school in two batches during the months of November and December. Most of them are now in South Africa.

INDIAN MEDICAL SERVICE.

The following is the list of surgeons on probation who were successful at both the London and Netley examinations, Jan. 30th, 1900. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley and the combined numbers are accordingly shown in the list which follows.

	Marks.		Marks.
*A. C. MacGilchrist ...	6063	T. G. N. Stokes	4694
J. W. D. Megaw	5369	H. M. Mackenzie	4686
†E. O. Thurston	5225	M. H. Thornely	4520
G. Browse	4996	F. V. O. Beit	4473
C. M. Goodbody	4991	W. O'S. Murphy ...	4305
R. Steen	4970	M. Corry	4173
F. F. Elwes	4965	C. C. Murison	4097
J. L. MacInnes	4882	H. A. Williams	3969
E. A. C. Matthews... ...	4851	W. C. Long	3954
‡L. P. Stephen...	4845	G. C. Beamish...	3743
L. Gilbert	4813		

* Gained the Herbert Prize of £20, the Martin Memorial Medal, the Parkes Memorial Medal, the Second Montefiore Prize in Military Surgery, the Pathology Prize presented by the Director-General, A.M.S., and the Maclean Prize for Clinical and Ward Work.

† Gained the First Montefiore Prize of 20 guineas and the Bronze Medal in Military Surgery.

‡ Gained the de Chaumont Prize in Hygiene.

The following gentlemen obtained honourable mention in the subjoined departments:—Military Surgery: Mr. R. Steen, Mr. E. A. C. Matthews, and Mr. F. F. Elwes. Military and Tropical Medicine: Mr. H. M. Mackenzie, Mr. J. W. D. Megaw, and Mr. L. P. Stephen. Military Hygiene: Mr. T. G. N. Stokes, and Mr. H. M. Mackenzie. Pathology: Mr. E. O. Thurston and Mr. J. W. D. Megaw.

ROYAL ARMY MEDICAL CORPS FUND.

Since we called attention to the starting of this fund last week we learn that already a good many subscriptions have been received and many additional ladies have joined the committee, amongst whom we may mention Lady McGregor, Lady Burdon Sanderson, Mrs. Godley, Mrs. Butlin, Mrs. Berkeley Hill, Mrs. Meredith, Lady (Michael) Foster, Lady (Russell) Reynolds, Lady (Georgiana) Curzon, Lady Kennedy, Lady Hanbury, Mrs. Willett, Mrs. Buzzard, Mrs. Bradford, Mrs. Arbuthnot Lane, Mrs. Field, Mrs. Lauriston Shaw, Mrs. R. C. Lucas, and Mrs. Davies-Colley. The first meeting of the committee will be held on Monday afternoon next at 5 o'clock. Lady Duckworth has kindly consented to receive the meeting at her house, No. 11, Grafton-street, Piccadilly. An executive committee will be formed and the progress of the Fund will be reported. We understand that arrangements have been made through the Army Medical Department for the immediate despatch of a number of flannel shirts which have been already sent in. We hope next week to publish a full list of the committee and of the subscriptions. We may again mention the name and address of the honorary secretary—Miss Maxwell Muller, 100, Victoria-street, S.W.

DEATHS IN THE SERVICES.

Surgeon-Major Alexander Charles Archibald Alexander of Boydstone (1st Coldstream Guards) on the 23rd of last month. After qualifying he obtained a commission in the 3rd Battalion of the Royal Scots Fusiliers and served later in the 3rd Battalion, Coldstream Guards, which regiment he accompanied in the Suakim Expedition in 1885, and was present at the engagements at Hasheen, at that near Tofrek, and at the destruction of Temai (medal with clasp and Khedive's star). Last year he returned from Gibraltar on sick leave, having had a slight sunstroke, from which unfortunately he did not entirely recover, so that to his great grief he was unable to accompany his regiment on the present South African campaign.

THE LEGION OF HONOUR.

By virtue of a Presidential decree dated Dec. 25th, 1899, the dignity of knighthood in the Legion of Honour has been conferred upon Dr. Finot, an officer of the French military medical service. The *Journal Officiel* announces the distinction in the following terms:—

Finot (Charles Jules Gabriel), Surgeon-Major of the Second Class in the 15th Regiment of Artillery; 12 years' service, two campaigns (Soudan). In the various engagements undertaken by the Sikasso Column M. Finot constantly marched with the leading detachments, exposing himself as much as the combatants and affording immediate aid to the men who were wounded by poisoned arrows.

LEAN'S ROYAL NAVY LIST.

No one who desires to know anything about the Royal Navy can afford to neglect this excellent publication, the eighty-ninth number of which lies before us. Here can be found the records of war and meritorious services of the officers of the Royal Navy, the Royal Marines, and Royal Naval Reserve, as well as a mass of information relating to ships and their war services. The publishers are Messrs. Witherby and Co., 326, High Holborn, and 4, Newman's-court, Cornhill.

COMPULSORY HOME SERVICE IN THE MILITIA.

We would call attention to a circular letter issued by Lord Wemyss on this subject in connexion with the proposed application of the militia ballot. The letter is both interesting and useful in that it affords brief summary statements of the opinions that have been expressed by various authorities on a subject of great importance and one which is attracting a good deal of attention at the present time.

THE WAR IN SOUTH AFRICA.

THE present time is one of depression and anxiety. A man who can make and enjoy a hearty breakfast after glancing at his morning paper requires to have a keen and vigorous appetite, and those who do not possess it or who are at all out of health will do well to defer the perusal of their newspaper until they have breakfasted. To sum up the situation briefly and to go to the root of the matter, our force in South Africa is not strong enough for the work which it has to do; our troops are usually outnumbered, the natural obstacles to be overcome are exceptionally difficult, and there are not any points at all capable of being defended of which the Boers have not in advance taken all possible advantage by strengthening them with entrenchments and every other artificial means in their power. The nation must be content to wait until a strong force can be organised and concentrated for the invasion of the enemy's territories with a definite end in view, which should, at any rate, have the effect of drawing off the Boer troops from their present positions. Meanwhile there is no wavering in the determination of the nation or the Government to prosecute the war to a successful issue, and a noteworthy illustration of the way in which all classes of society are responding to the national call was to be seen the other day at St George's Barracks, where a large number of well-connected young fellows had enrolled themselves as troopers in a corps of Yeomanry Infantry.

It is recognised on all sides that the Royal Army Medical Corps is doing splendid work in South Africa. The first official despatches from the seat of war, in which the generals give an account of their battles, have been received and published in the *London Gazette*. They are forwarded

by Sir Redvers Buller and include reports from Lieutenant-General White and Lord Methuen and their subordinate officers, and treat of the actions at Glencoe, Elandslaagte, Rietfontein, Willow Grange, Belmont, Enslin, Modder river, and Colenso. These despatches furnish strong testimony to the grand character of the work that is being done by the medical officers, as may be seen by the following extracts. Lord Methuen reports:—

I again draw attention to the exceptional organising power of Colonel Townsend at Swink's Pan at 11.30 P.M. I was informed that owing to all the ambulances having been used for taking the wounded to the train at Belmont I had scarcely a field hospital mounted officer, only three ambulances, and three stretchers. I knew I had to fight next morning, so got together 50 blankets in order to carry wounded with help of rifles. I also sent to Colonel Townsend to make arrangements for wounded by 3.0 A.M., a messenger having to ride seven miles to him. He met me on the field with full supply of ambulances and I never saw anything more of him or the wounded because he had a train ready for them between Gras Pan and Belmont. His only complaint is that there is not much of his mules left, an observation which applies equally to men and animals.

In a despatch descriptive of the operations at Modder river attention is called to Captain S. G. Moores, R.A.M.C., who, although wounded in the hand, said nothing but continued his duties. And Lord Methuen concludes this despatch with the following:—

Again I call attention to the splendid hospital arrangements, for at 4.45 P.M. on the day after the fight all my wounded were on their way to Cape Town.

I am glad to have been slightly wounded because in no other way could I have learnt the care taken of the wounded, and there was nothing officer or private soldier required that was not provided at once, and the medical officers never tired in their endeavour to alleviate suffering.

These reports may be taken as samples of the general purport; they are eminently satisfactory and the officers of the Royal Army Medical Corps are to be sincerely congratulated. The army medical system in the field has been well thought out and organised and has been adopted after ample experience of its adaptation to the objects in view.

Reuter's Agency has been authorised by Lord Roberts to state that he has made a most careful inspection of all the hospitals at Cape Town and is perfectly satisfied that everything is done that can be done or that medical skill can suggest for the benefit and comfort of the sick and wounded. At the time of his visit there was some question of asking for additional nurses, but he found that the request in the sense which he had conveyed had already been anticipated by the home authorities, who cabled that they were sending as many nurses as he considered necessary to meet all possible requirements of the troops.

FATAL INJURIES WITHOUT APPARENT LESION.

Mr. S. Osborn, F.R.C.S. Eng., chief surgeon to the Metropolitan Corps of the St. John Ambulance Brigade, sends us the following interesting communication:—

Whilst volunteering as a surgeon amongst the wounded Greeks in the late Turco-Greek war the following cases of fatal injuries without visible lesion presented the greatest interest. The ship *Albania* having been handed over to me I arranged it for the purposes of a hospital ship and proceeded to Volo with the idea of clearing the station hospitals situated there and leaving them ready for any further cases that might be brought down from the front. The battle of Velestrino taking place on my arrival and the town of Volo being subsequently occupied by the Turks necessitated not only my carrying out the above project but also removing, in addition, those of the wounded who had been brought direct from the battle-field, and it was amongst the latter that these cases were found to which I desire to draw attention. There were three in all. One patient died on his way to the ship and was not taken on board and the other two patients died in a few hours and before the ship reached the Piræus. It is much to be regretted that on account of the amount of work and limited space at disposal no operation was attempted or post-mortem examination performed. The symptoms were intense pain in the abdomen, generally referred to the pit of the stomach, accompanied by all the signs of shock and attended with constant retching. The urine was drawn off and was quite natural. There was no external wound of any description, not even any bruising. The patients were kept under observation and under the influence of opium with the intention of being subjected to operation as soon as circumstances would permit, but which the fatal termination prevented.

What were these cases? We know the serious effect of buffer accidents, also of blows delivered "below the belt," to use fighting parlance, and also of what are called "wind contusions" and blows from spent shot or broken shell. The soldiers themselves gave the cause in each instance as a violent blow in the epigastric region, but by what means delivered they were unable to say. Rupture of some internal organ and concussion of the sympathetic nerve plexus appear to be the most likely causes of death in these cases. We all know the excessive pain produced by even a slight blow in this situation and a severe one might necessarily produce such a result, and it is to a concussion of the sympathetic nerve plexus that I would attribute the fatal termination and excessive and constant pain.

In the present South African war similar cases have occurred judging by the following extract from a letter in one of the daily papers: "The naval guns fire steel-pointed armour-piercing shells, one of which killed two Free-Staters, father and son, who were chatting together at the time. Strange to say, in the case of these casualties there were no visible wounds of any description." Such cases may come again under the notice of military surgeons and more light may yet be thrown upon them and also as to whether operative interference is justifiable if circumstances allowed its immediate application. It is with this object in view that I now draw attention to these cases.

(NOTES FROM SIR WILLIAM MAC CORMAC.)

(*Continued from p. 188.*)

Durban, Dec. 28th, 1899.—This morning I visited two of the hospital ships—viz., the *Lismore Castle* and the *Nubia*. The *Lismore Castle* was originally chartered by the Government from the Castle Line as an ordinary transport ship for troops. A sudden order having arrived that another hospital ship was to be equipped at once to supplement the *Spartan* (the first hospital ship fitted up at home), this vessel was chosen. She was handed over to the Admiralty on a Monday; two days were more or less occupied in coaling, and in spite of this the vessel was equipped and actually received sick on the Saturday, four and a half actual working days having been sufficient, under the management of Captain Holland, Indian Marine, and Major Mc Cormack, R.A.M.C., for the whole transformation. When the fittings of this ship as she now stands are compared with her previous accommodation as a troopship it is obvious that the quickness and method with which the work was completed reflect the greatest credit on all concerned. The Admiralty carpenters were ably assisted by civilians from Durban. The ship is at present under the medical command of Civil Surgeon Brodie, no Royal Army Medical Corps officer being available. He is assisted by three other civil surgeons and has under his command the following staff: one army nursing sister, four civilian nurses, 30 civilian male medical attendants, two qualified civilian dispensers, and one sergeant and nine men of the King's Royal Rifle Corps (to be used as fatigue men, guards, &c.).

The ship is noted as being particularly steady at sea. Her tonnage is 4000 and she can provide for 250 sick, including convalescents. On the main deck are situated an officers' ward, an orderly room, an operating theatre, 15 convalescent officers' cabins, a disinfecting bath-room for linen, &c., three officers' bath-rooms, two water-closets, the mortuary, a dining saloon, a bar, &c. The officers' ward is situated in the stern of the ship. It is a well-ventilated and comfortable cabin, running from side to side of the vessel, thus allowing of a free current of air. This ventilation is assisted by an electric air fan which materially helps to circulate the air. There are four beds in the ward, consisting of cots which can be allowed to swing or be made fast at will. Each cot is provided with mosquito curtains and can be separated from its neighbours by ordinary canvas curtains, forming a separate cubicle for each patient. The ward is also provided with a kettle which can be heated very quickly by electricity. There is an ample supply of flowers and easy chairs, which are supplied both for the officers' wards and the men's wards by the ladies of Durban and by the Castle Company. This ward is lighted—as is, indeed, the whole of the ship—by electricity. The operating room consists of a specially constructed cabin, painted inside with white enamel, and the floor is covered with oil-cloth. It is provided with a very serviceable operating table, which was purchased locally, an electric-heated steriliser, moveable electric lanterns, and jars of antiseptic fluid, and it makes an airy, well-lighted, and suitable room for the purpose. The convalescent wards consist of 15 of

the ordinary double-berthed passenger cabins, each labeled "One convalescent officer," and of these cabins three are four-berthed and can accommodate two officers each. The mortuary is situated in a cabin on deck in a far corner and is provided with a lead-covered table, &c. The dining-saloon is the ordinary saloon and is occupied by the medical officers, ships' officers, and nurses. The bar is looked after by the ship's steward, who is daily indented upon for the liquor required for the wards. The lower deck is divided into four wards, lettered respectively A, B, C, and D. A Ward is situated in the fore part of the ship and can be occupied by 150 convalescent men who sleep in hammocks. B Ward contains 56 beds, C Ward 22 beds, and D Ward 21 beds. All of these wards run from side to side of the ship. The whole of the original inside of the ship's sides is covered by a wainscoting painted white. Two electric fans in each ward afford great comfort, and B Ward, being specially large, has four fans. The beds are all fixed, each one being provided with a hanging rope from the deck above, so that the patient may pull himself up in bed. There are easy chairs, flowers, books, hand-fans, and so on, to add to the comfort of the patients. In the fore part of A Ward is a bath-room supplied with fresh water and salt water, a pantry, a linen locker, and a disinfecting bath. This also is lighted by electricity. Two specially constructed lifts are used to convey the serious cases from the main deck and upper deck to the lower deck, the stretcher being placed upon the lift which is lowered by hand pulleys. Instead of the ordinary ship's ladders, long wide stairways with a very easy gradient have been fixed up, so that the men may reach the main and promenade decks without difficulty or fear of accident. The sick attendants are accommodated below A Ward on the orlop deck. The main promenade deck has been given over to the convalescent patients and the bridge deck is reserved for the officers, who also have the use of the ship's smoking-room on this deck. Sick warrant officers are provided for in suitable ship's passenger cabins situated near D Ward on the lower deck. The whole ship outside was re-painted white and a large red Geneva cross has been added amidships. The Admiralty spent £1600 upon her re-construction, and in addition numerous articles have been added by the Donald Currie Line and by the ladies of Durban.

Having inspected the *Lismore Castle* we next visited the Peninsular and Oriental Company's ship *Nubia* lying close by. This ship had also been in use as a troopship until Dec. 26th, when orders were received to convert her into a third hospital ship, to be ready for occupation on Jan. 5th. At present she is in the hands of the workmen and is rapidly losing all internal recognition as a passenger ship. She is large and well ventilated, is painted white within and without, and is being fitted up on exactly the same lines as the *Lismore Castle*. Her medical staff has not yet been appointed. It is hoped that an officer of the Royal Army Medical Corps may be found available to take command, but the short-handedness of this corps at present with the large army at the front makes it probable that the vessel will be managed by civilians under the supervision of the principal medical officer of the Natal Field Force.

The whole of the inside of the bulwarks of the vessel are being wainscoted in the same manner as the other ships. The same electric air-fans and hot-water kettles, baths, water-closets, dispensary, &c., will be fitted up as in the other ships, and the general arrangements and distribution will be according to the following plan. The officers' ward will contain 10 cots and the officers' convalescent cabins 27 cots. The men's wards will be lettered respectively A, B, C, D, E, F, and G. A Ward will contain 100 cots (60 swinging and 40 fixed). B Ward 28 fixed cots, C Ward 28 fixed cots, D Ward 200 hammocks for convalescents, E Ward 30 fixed cots, F Ward 24 fixed cots, and G Ward 25 fixed cots, providing a total accommodation for 472 sick and convalescent patients. Each ward will be supplied with three electric fans, an electric kettle, a pantry, two baths, and from three to five water-closets. There will also be an antiseptic receptacle in each ward. The upper decks are very commodious and will be used for exercise as in the other ships.

On considering the most extensive surgical and medical work carried on in connexion with the Natal Field Force and the immense quantity of appliances and drugs which are being consumed by the field hospitals, bearer companies, regimental medical staff, stationary field hospitals, large hospitals on the lines of communications, hospital trains, and hospital ships—the arrangement and efficiency of which I have personally tested and described—the question naturally presents itself as to the sources of supply of all the bandages, drugs, splints, instruments, &c., whose renewal, especially after an engagement, becomes such an imperative matter. In order to satisfy myself upon these points and to complete the description of the medical arrangements in connexion with Natal I visited Major Mc Cormack, R.A.M.C., who is in sole charge of the Base Medical Stores Depôt situated in Durban.

The base depôt has been established in the goods shed of the railway station at Durban which has been kindly placed at the disposal of the Royal Army Medical Corps by Mr. D. Hunter, C.M.G., the general manager of the Natal Government Railway. This position was selected by Major Mc Cormack because (1) it is in direct rail communication with the wharf whence supplies arriving by steamer can immediately be run on trucks direct to the shed; (2) the shed is practically on the departure platform and an arrangement having been made for the transmission of all medical supplies by mail train or passenger train no time is lost in their dispatch, and medical officers at the hospitals can thus receive their supplies a few hours after the dispatch of the wire demanding them; (3) it is within a few yards of the post and telegraph offices and is in immediate touch with the railway officials, who are doing everything in their power to accelerate the delivery of the stores as required; (4) electric light is also available, being easily carried into this shed, so that work may be carried on by night, which is often necessary, as well as day; and (5) the shed is also very dry and safe. The supplies have all been forwarded from England, but in case of any unforeseen call upon his resources, Major Mc Cormack has obtained lists and prices from all the chemists of Durban of all that can be purchased locally in case of need. He is also in direct communication by cable with the Director-General of the Army Medical Service, so that a continuance of the British supplies is assured with the smallest possible delay.

In order that the medical units actually engaged in the field may be able to replenish their supplies at the shortest notice a branch of this base depôt in the shape of an advance medical store train has been organised. This train consists of three large railway goods trucks. Accommodation is provided for a lieutenant and quartermaster (in charge), one sergeant, and two men, who live continuously on board. The trucks are so fitted and shelved that a large quantity of medicines and surgical material can be carried and so arranged that the contents of every box (which are printed on the outside) are available at a moment's notice. The materials contained in these boxes are those required to replenish the field-panniers, surgical haversacks, and field companions used by the regimental medical staff and bearer-companies. Two of the trucks have at present been sent forward with their *personnel* on board to the principal medical officer and the third truck remains here in reserve, ready to be filled up and instantly despatched by special engine. The idea of this advance train is that it may be pushed as far forward as possible and kept moving from siding to siding as the troops move forward. This plan was carried out in the Colenso battle and there was in consequence no risk of the field force running short of any medical requirement and every medical officer had everything he wanted on an occasion when exceptional demand had to be made.

——— WILLIAM MAC CORMAC.

(FROM OUR WAR CORRESPONDENT.)

Cape Town, Jan. 8th.—Having spent some time in the collection of reliable records I am able to give you the admissions to hospital up to date. At No. 1 General Hospital, Wynberg, they are as follows: 125 officers, 1204 non-commissioned officers and men, 15 wounded Boers—total, 1344. The deaths up to date in this hospital have been three officers and 20 non-commissioned officers—total, 23. At No. 2 General Hospital there have been admitted 580 non-commissioned officers and men. The deaths up to date have been those of 11 non-commissioned officers and men.

The following operations have been performed in No. 1 General Hospital:—Amputations: of the thigh at the middle third, one; of the leg, three; of the thumb, one; of the finger, three; of the arm, one; and of the forearm, one. Excisions: of the elbow, one; of the eyeball, three; of the

metacarpal bone, one; and of part of the ulna, one. Cases of trephining, five; of laparotomy, two; of paracentesis thoracis, one; of extraction of bullets, 30; of exploration, five; removal of glands, one; removal of splinters of the humerus, one; and of tumour one—total, 62. In No. 2 General Hospital:—Amputations: of the thigh, one; of the shoulder, one; of the leg, two; and of the fingers, two. Cases of trephining, three; of laparotomy, one; of enucleation of eyeball, one; of resection of rib, one; and minor operations, 15—total 27. The deaths up to date in No. 2 hospital were—one from gunshot wound of the skull and brain, one from lacerated bladder (gunshot), two from penetrating wound of the abdomen, two from scalp wound and fractured skull (gun-shot), one from fractured spine (gunshot), one from shock after excision of the right arm excised at the shoulder-joint, one from tetanus (left thigh and buttock, already referred to), one from dysentery, and one from gunshot wound of the brain, thorax, and abdomen—total 11.

A sad and very curious case was that of a Naval Brigade man. A Mauser bullet struck a cartridge he was carrying in his bandolier, causing it to explode and enter his abdominal cavity, I regret to add, with fatal effect. This brave fellow's latest words were "that he would not have cared if a Boer had shot him; but to be killed by one's own shot was much too hard lines."

My attention has been called by Colonel Anthonisz, Principal Medical Officer, 1st General Hospital, to the fact that several of the new drugs are not in the scheduled list. They are not included either in the Indian list; but out there a rather happy custom prevails to overcome the omission which might with advantage be copied by the authorities at home. Every medical officer in charge in India gets an extra allowance of 50 rupees a year to procure any new remedy that he requires. No doubt the authorities here would instantly supply what is needed; but a certain routine has to be gone through and much valuable time is often wasted in procuring what ought to be ready at hand to meet a pressing necessity.

If every possible care has been taken of Tommy Atkins his wife and children have not been forgotten during his absence at the front. A few days ago I had the pleasure of being present at one of Mrs. R. Chamberlain's pleasant Christmas treats to the young ones in the schoolroom at the medical camp. The tables literally groaned under the weight of good fare for both young and old, and the concert which followed, conducted by such proficient musicians as Mrs. O'Brien, Lieutenant Chalk, and others, failed not to interest and amuse all the wounded who were present thereat. Mrs. R. Chamberlain and her willing workers received such a reception as will long be remembered and will doubtless convince them that their labour of sympathy and love was thoroughly and deservedly appreciated by all present.

In order to relieve the three general hospitals of convalescent officers a portion of the sanatorium at, or near to, Claremont has been secured. This building (a fine and imposing structure) was built by an American firm, and is located in a healthy and cheerful spot which commands an excellent view of Table Mountain. Its accommodation is both ample and good, and equals, if it does not excel, anything in or around Cape Town. It is built in three or four storeys, the corridors being both lofty and wide. The fittings are modern, and the bedrooms (106 in number) are replete with everything necessary for a sick person's comfort. There are some 35 convalescent wounded officers located in this charming retreat and all seemed by their own statements to be progressing most favourably towards recovery.

The Staff of No. 1 General Hospital, Wynberg.

Jan. 9th.—No. 3 Hospital Train has just arrived from the Orange River and the De Aar districts, bringing down three officers and 50 wounded and sick men, most of whom were located in No. 3 Hospital at Rondebosch under the superintendence of Lieutenant-Colonel Wood, R.A.M.C., and his most efficient staff. A few were sent to the Duke of Portland's Hospital at Rondebosch, an institution providing 110 beds, the whole cost of which has been borne by the Duke. It is in charge of Major Kilkelly, R.A.M.C., and amongst other notabilities on the staff are Lord and

Lady Henry Bentinck, these living at present under canvass.

I am happy to state that in spite of much wind and constant dust storms the health of the troops in the Orange River district remains exceptionally good, and the Red Cross Society, under the very able control of Colonel Young, is doing grand work by a liberal distribution of medical comforts, such as mineral waters, preserves, fruits, and tobacco. These gifts are much appreciated by the troops, who are sensible of the great kindness of the donors. The inhabitants of Cradock district forwarded over £200 worth of goods for the sick and wounded. The woollen pyjama suits served out by the Red Cross Society to all the sick and wounded have been especially appreciated.

Having learnt that some sickness prevails in a military camp distant about 40 miles from Cape Town, I am going there at once to learn all particulars, especially as there is some doubt as to the pureness of their water-supply.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

Another blank week as far as we are concerned here, as although there has been fighting on the Natal side most of the wounded will be treated in the hospitals and ships at Pietermaritzburg or Durban. We are sending a large draft of sick and wounded home by the *Majestic* which sails on Jan. 15th, about 150 men and 15 officers; this will clear our hospitals pretty well and give us time for a look round and a general brush-up preparatory to receiving any more who may come down from the Modder River and Spytfontein districts when Lord Methuen's division next makes a start towards Kimberley. I was on board the *Majestic* a few days ago and was very much struck by the splendid accommodation which she offers for transport purposes, and I could not help wishing it were possible for the authorities to take up a couple of ships of her size and splendid accommodation for hospital ships. If a ship like the *Majestic* or *Teutonic* were to sail regularly from Cape Town to Netley, say once a month, there would be no necessity for sending patients by smaller boats and the difference in comfort and quickness of passage would amply compensate for the increased expenditure. I maintain that ships of the size and possibilities of the *Majestic* class are much more suitable for the conveyance of sick and wounded than smaller and slower vessels, their great stability alone being a strong point in their favour when one takes into consideration the kind of weather they will meet with in the Bay and English Channel at this time of year. Whilst on this subject I may say that the *Princess of Wales* hospital ship arrived here yesterday, but I hear rumours of sundry mishaps that have occurred on her outward voyage. However, we will hope she will do better on the homeward trip. The *Nubia*, one of the Peninsular and Oriental transports, is being fitted up in a most complete manner as a stationary hospital ship at Durban and should be a very welcome addition to the medical establishment on the Natal side. All our wounded are doing excellently well and I must say I am greatly in favour of treating cases under canvas. The wounds seem to heal in a more rapid way than they do in permanent buildings, not that the results have not been in every way excellent in the hospital wards in No. 1, but I think that the average time has been decidedly less in cases treated solely under canvas as in No. 2. Sir William Mac Cormac returned to Cape Town from Natal yesterday by the *Norman*. He was present at the big fight at Colenso and was able to see for himself the way the wounded were removed from the field, and I understand that he is full of praise for the manner in which things medical were conducted. We expect Lord Roberts and Lord Kitchener to-morrow, but, of course, I know nothing of their intentions, as that is quite out of my sphere, and the lay journals will give you all the news they consider advisable. When the next batch of invalids go we shall have very few in hospital, and they will principally consist of cases that will be ready to go up again in a few weeks or those whom we consider unadvisable to send to England at this time of year. I have absolutely nothing new to tell you. As I stated before, we have had no wounded down for the last ten days, and those who have read my former letters know all about the cases we have in at present, so that till more fighting takes place on our side I shall have no tale to tell.

Wynberg, Jan. 10th.

Correspondence.

"Audi alteram partem."

"THE CONFERENCE AT NEWCASTLE AND THE MIDWIFERY QUESTION."

To the Editors of THE LANCET.

SIRS,—I regret that want of time prevented my replying last week to Mr. Haydn Brown's letter of Jan. 20th. I take the clauses of his suggested scheme *seriatim* and will answer them as briefly as possible. 1. I do not think it would in practice be possible to divide the responsibility for a case properly or justly, even if at all, between the nurse and the medical man, and the attempt would probably lead to much unpleasant friction in any case that did not progress exactly as it should; but if, as arranged in Clause 3, the nurse acts "virtually as medical practitioner's assistant" the responsibility surely falls on the medical man, and he would not have, as in the case of an ordinary assistant, the opportunity of dismissing the nurse if he did not think her a good one; he could only dismiss her, and that not directly, in the case of proved and accomplished malpraxis. Clauses 2, 5, and 6 all relate to questions of fee, which I do not think would or should be embodied in any Bill. The fee suggested in Clause 5 would be quite inadequate for the medical man, since "obstetric nurse's" fee would, I assume, be not less than "former midwife's" fee, the medical man's fee would be equal to the "cost of common help usually required," that is something varying from 1*s.* to 2*s.* 6*d.*, in rare cases perhaps as much as 5*s.* What is the intended effect of the medical man's visit as suggested in the latter paragraph of Clause 4? The only object I can see is to shift the responsibility—in theory partly, in practice wholly. Clause 7 would add a new terror to the practitioner's life and would, moreover, create an unworkable monopoly. We are not dealing with paupers only who have to take what they can get and be thankful, but with at any rate all sections of the working class; and the complications likely to arise between medical neighbours and the difficulties of enforcing the rule are fatal objections to that clause and to the following one (Clause 8).

I am, Sirs, yours faithfully.

Freshford, Jan. 28th, 1900. CHAS. E. S. FLEMMING.

"ANTI-TYPHOID INOCULATIONS."

To the Editors of THE LANCET.

SIRS,—Will you allow me to make a few friendly criticisms on this subject as recently treated by Professor Wright in his paper in THE LANCET of Jan. 20th, p. 150, and in a leading article in THE LANCET of Jan. 27th, p. 245, in view of its asserted importance as a prophylactic measure and as possibly acting as one means of rendering the youthful British soldier more immune to the adverse conditions by which he is surrounded at home and more especially abroad? I take it that the value of any figures adduced as bearing on the relative immunity of the inoculated as contrasted to the uninoculated will depend on the degree to which it can be shown that the cause was generally and uniformly in operation in the sections of the community embraced by the figures. When the cause is common to many at one and the same time, under like conditions pertaining to all within its sphere of action, endemic area, or localised outbreak, the outcome of results in the inoculated and uninoculated sections is necessarily of high value; but when, on the other hand, the incidence of the disease indicates an agency not common to the whole community or a section of it but influencing individuals only here and there, and presumably derived from an outside source—sporadic cases, the means of accurate deduction are wanting and an element of uncertainty difficult to eradicate is present. Now this latter feature is the predominant one in Indian enteric fever, while endemic and epidemic outbreaks are rare. The main mass of disease in this country is made up of isolated cases having but little traceable connexion as to source between each other; the enteric cause impresses but a few of a large susceptible mass, attacking those only who come within its sphere of action, the source being doubtless outside of the barrack limits, little, however, being known

definitely of the conditions which surround this outside virus or of the mode or media by which it is transferred to the susceptible soldier. With such cases the difficulty in tracing exposure to these sources on the part of an inoculated or uninoculated mass of men and of making deductions on the value of inoculation from the instances of disease is great, for although it may be advanced that both sections are equally liable to exposure to the cause, yet unless it can be shown that this feature really occurs in individuals of each section in equal proportion a strong element of doubt is introduced into any deduction made which would require large numbers and an extended period to eliminate. From the fewness of attacks in proportion to the large susceptible mass always present in our army in India it is apparent that but a small ratio is really exposed to the sources of this sporadic disease in spite of their undoubted existence, and how are we to arrive with reasonable certainty to allow of an accurate deduction in this inoculation experiment at the number of each section contained in this ratio? In the instance of the 2nd Gordon Highlanders adduced in the table at p. 152 (one of the strongest supports for protection) during a period of nearly eight months following inoculation (the corps being located partly in a hot plain station and partly in several cool hill stations), in 397 inoculated men, the attacks gave a ratio of 0·25 per cent., while in 614 non-inoculated there was a percentage of 2·8—an amount, in view of the period embraced, not suggestive of marked prevalence of the cause. Now, were the predisposing and exciting causes of enteric fever so equally dispersed over the respective sections in these different stations as to allow of acute deduction on the potency of inoculation from the results?

It is apparent from the table that inoculation does not ensure security, nor does it ensure uniformity in results, the ratios ranging from 0 to 2·1 per cent.; and these results do not differ much from those known to occur in newly arrived corps irrespective of inoculation.

Professor Wright, referring to the battery which showed a result opposed to the other corps (one case occurring in the inoculated section and none in the non-inoculated), (p. 151) mentions as especially noteworthy "the fact that a battery consisting in large part of men newly arrived from home has in the 11 months subsequent to the institution of the inoculation had only one case of enteric fever"; but a reference to the known data of the incidence of disease in newly arrived corps prior to inoculation will indicate that this is no new feature, as complete exemption has occurred in some instances and but a few cases in several. I take it that what is wanted is a degree of immunity beyond what has been already recorded.

That the tendency of the results as a whole is hopeful and suggestive is apparent, yet in view of the importance of the point at issue and the necessity of building on a wide and firm foundation I would ask whether better fields of observation do not exist. In this country the disease is no less prevalent than in India, while the circumstances surrounding it are better known. The results so far as reducing susceptibility or reducing virulence would here be no less valuable than in India, while the experience gained would be elsewhere applicable. Or if these experiments must be limited to the military section we have in Dublin, at home, and in Malta limited circumscribed communities producing an equivalent in disease to India and probably better spheres of action; while in Bermuda, relatively in advance of all other stations at home and abroad in the production of cases, we have with greater prevalence of the cause advantages for studying the outcome of inoculation which few other stations possess. Certainly the numbers available in this island are not great, yet the value of the accruing knowledge would probably be of a high order.

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel, Medical Staff (retired).

Lee, Jan. 29th, 1900.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—The article by Dr. Edmunds in THE LANCET of Jan. 27th, p. 227, is a strange mixture of fact and theory. The opening sentences entirely agree with the opinions of Lieutenant Clayton Lane, I.M.S., and myself; the rest of the article consists of praise of Krohne's inhaler and theories of what is supposed to happen during its use. As Dr. Edmunds evidently has failed to grasp my contention may I quote a portion of my letter to THE LANCET of July 1st, 1899, p. 53? I then wrote: "In THE LANCET of June 17th you refer to a number of deaths occurring during the administration of chloroform, and, as usual, I find detailed accounts of the amount of anæsthetic 'used' or 'given.' Even where not expressly stated it appears to be inferred that if a drachm is 'used' the patient gets a fixed percentage of this drachm into his blood *viâ* the lungs. Nothing could be further from the truth. Anyone who has given a large number of anæsthetics knows how the depth and frequency of respiration vary in different patients and at different times in the same patient, consequently, although it is easy enough to say how much chloroform has been vapourised in a given time it is impossible to say how much of this vapour has been inhaled by the patient. The only approximately correct method of calculating this is to administer the chloroform from an airtight inhaler which, from the concentrated vapour so produced, is rightly condemned as being highly dangerous. With many of the elaborate machines now in vogue it is easy enough to blow a certain percentage of chloroform vapour at the patient; the difficulty is to get him to inhale the same at a uniform rate. Apart from the saving of chloroform, which is cheap enough, I fail to see any advantage in anæsthetising a patient by means of a cumbrous apparatus and 'using' only half a drachm over the production of the same results by means of half an ounce gradually dropped on a simple mask such as Skinner's. If the patient does not absorb a similar dose of chloroform in each case, why do we get a similar result?" I am still awaiting a reply to this query. In reply to Dr. Edmund's query I may say that I set out with the object of inducing anæsthesia slowly and quietly in from about 10 to 12 minutes and of maintaining this state with regular pulse and respiration and contracted pupils. I am in the habit of administering chloroform almost daily on lint spread on a metal frame, commencing with one-minim doses every 20 seconds and gradually increasing the dosage up to five minims or more if required. When complete anæsthesia is produced I find from three to five minims every half a minute usually sufficient to keep up regular anæsthesia, but I am guided rather by the state of the pulse, respiration, and pupils than by any hard-and-fast rule as to the amount of chloroform and vary the amount accordingly. In other words, I am guided by the state of patient and not by the amount of chloroform which theoretically ought to be used. An experience of over eight years' hospital, in addition to private, practice has proved to me the practical efficiency of this method and its relative (not absolute) safety as compared with other and more elaborate methods. The academical discussion as to whether this is a rule-of-thumb method or scientific dosage does not interest me. The fallacy of comparing a drug administered by the stomach in solid or liquid form with a vapour given from an inhaler *viâ* the lungs is obvious. Theoretically, what we want to know is the amount of vapour which is being absorbed by the patient, not how much we blow at him. Practically we have to be guided by its effects on pulse, respiration, and pupils.

I am in agreement with Dr. Edmunds in pleading for accuracy in administration of chloroform, and if anyone can devise a practical method of estimating the amount of chloroform vapour absorbed by the patient, instead of calculating the amount blown at him, I shall certainly adopt it. The only advantage of Krohne's inhaler is the saving of chloroform, but not of the patient, about whom all that the administrator knows is that he cannot have absorbed a larger amount than has left the bottle. If the patient should unfortunately succumb, what consolation is this fact to either the patient's friends or the anæsthetist? It is useless to point at the bottle and say that it cannot be a case of overdose because only one drachm has been used. In fact, the use of a machine, which to a certain extent limits the diffusion of chloroform vapour, makes it easier to give an overdose with a smaller amount of chloroform. As might be expected, deaths from chloroform given from Krohne's inhaler are beginning to crop up and will continue to do so. How anyone can deceive himself into the belief that any known method of chloroform administration, no matter how perfect theoretically, can be absolutely safe passes my comprehension. In my own practice, in reply to patients' queries as to the safety of chloroform anæsthesia, I invariably tell them that the risk is

a very small one, but undoubtedly exists. I do not envy the feelings of a man who, after assuring his patients for years that by his method of administration no risk is run, is rudely awakened from his false security by a fatality. I share with Dr. Edmunds his distrust of geniuses, especially when they appear armed with elaborate machines for what they are pleased to term the "scientific" administration of chloroform.

I am, Sirs, yours faithfully,

Plymouth. C. HAMILTON WHITEFORD.

"SOME FACTS GATHERED FROM EXPERIENCE RESPECTING MISCIBLE BLACK CARBOLIC DISINFECTING FLUID AND CARBOLIC DISINFECTING POWDER."

To the Editors of THE LANCET.

SIRS,—Allow me to offer some few remarks on the above article which is very interesting. Mr. Alexander has done much service to the public and also to the honest manufacturer by calling attention to the matter. Analysis is essential nowadays in nearly everything, especially so when the substances for examination are to combat disease. After very considerable experience in analysis of our own (Messrs. Lawes') fluids and powders, those of other makers, and various preparations of which the phenols are the vital constituent, I consider the determination of the phenols is both hopeful and hopeless—hopeful as regards being able to give a certain opinion as to the value of the preparation and hopeless when extreme accuracy is required. The comparatively simple process which I have carried out thousands of times enables me to control the manufacture, prevent importation of useless material, and have a very solid piece of evidence to show those who will say a good deal to procure an order for their products. I have not had much trouble with naphthalene, but no doubt some makers have; careful inspection by the chemist in charge of the manufacture will get over this. The preliminary precaution of taking a sample by glass rod from the cask, as mentioned in the article, will readily afford a clue on this head. Analysis of the creasote is, of course, very essential.

Now as regards analysis of fluid the method Mr. Alexander gives appears to be very satisfactory, but it seems rather long, and I think for practical purposes might be simplified. My method is almost as given by Tidy (Lunge's "Coal Tar and Ammonia," p. 361, second edition), but I have made some slight modifications which long experience has shown to be easier and without any sacrifice of accuracy. I take 50 cubic centimetres of fluid creasote, &c., instead of 100 cubic centimetres, distil in six-ounce stoppered German glass retort till full of fumes, heat up distillate twice with 20 cubic centimetres of caustic soda (specific gravity 1·200) in small Jena (250 cubic centimetres) flask standing on an iron plate. Shake well; separate by means of a separating funnel or tube. To the mixed caustic solutions add excess H_2SO_4 (one part acid to three parts of water); then measure the tar-acids when cold in a burette. Some of the sulphate of soda solution can be got rid of by the separating funnel. This test can be done in about an hour. The retort is heated direct over an argand, which gives both heat and support. Fracture is not frequent if care is used. There is no danger as there is no explosion—at least, I have not seen one. The lad usually employed in the laboratory can do these analyses very well after a bit. This test, founded on Tidy's, is the sheet-anchor of the business. I believe some chemists do not know about it, or at least its application in this direction, consequently at times ludicrous results are returned which must cause annoyance to medical officers of health who have, I should say, no time to spare. Of course, water, total oils, pyridine bases, alkali, &c., can be estimated if required and do not present much difficulty with a little practice; they are of importance, but for practical purposes of disinfecting the "tar-acids" are the thing. As to powders, distillation in retorts is not, I think, very satisfactory. The retorts crack awfully and I doubt if anything like the true percentage is obtained. Thorpe in his dictionary gives a method, treating the powder with ether and filtering after standing over night. This gets out tar-oils and acids; soda (specific gravity 1·200) is added, which takes up the phenols and leaves oils; part of the ether is distilled off and the rest separated; the caustic soda solution is then treated with H_2SO_4 and the tar-acids are measured in a burette. This method gives good results but is rather long.

The little plan suggested to me by your chemist of heating a weighed quantity of the powder for a couple of hours or so at 100° C. and taking the loss as an indication of phenols is very useful, especially to works chemists, who know what moisture the base of the powder and acid contain, so that the amount can be deducted from the total loss; the remainder, taken as phenols, very closely agrees with the ether method. This plan is specially useful to tell what is in an unmarked cask, &c., or rapidly check a lot going out; it would be of service also to medical men, as if a powder is guaranteed 10 per cent. carbolic and only shows 6 per cent. total loss it is certainly deficient and can then be submitted to further examination. I might venture to suggest that it is desirable to keep strong disinfectants and carbolic tooth-powders carefully under control and away from young children; tooth-powder is especially apt to get into the eye, causing painful results. Trusting that these few remarks on the analyses of valuable substances may be useful to medical men whose onerous labours are lightened if their patients' surroundings are healthy and clean,

I am, Sirs, yours faithfully,

VINCENT EDWARDS, F.I.C.,
Chemist to Messrs. Lawes, Limited.

Lawes' Works, Barking, Essex.

"THE MURMURS IN MITRAL STENOSIS."

To the Editors of THE LANCET.

SIRS,—Dr. Brockbank's theory being a modification of that propounded by Dr. Barclay and supported by Dr. W. H. Dickinson and others, it may be as well to recur to the origin of Dr. Barclay's theory—viz., a case of mitral stenosis in which "the contraction of the heart could be felt between the ribs during the pause prior to the occurrence of the first sound and while the presystolic murmur was audible to the ear."[1]

Dr. Dickinson supported the theory, stating, "I have satisfied myself and confirmed my conclusion upon many patients that the so-called presystolic murmur does not precede the impulse of the heart, but begins with it."[2] The whole subject was thoroughly discussed in your columns in the years 1872, 1887, and 1889; there is therefore no occasion for reproducing arguments that have been used against this theory and which are equally applicable to Dr. Brockbank's modification. One question, however, of Dr. Dickinson's is, I think, important: "Does the lifting of the chest-wall as felt by the finger indicate the systole?"[3] My answer to this is, that the systole of the *right* ventricle is felt, but it does not necessarily follow that the left ventricle is also in systole.

In an article entitled "A New Explanation of the Presystolic Bruit," in the *Clinical Journal* of July 12th, 1899, I recorded a similar case to Dr. Barclay's. Until I met this case I did not appreciate the significance of the "lifting" movement, concerning which so much has been written. On palpation the right ventricle could be distinctly felt contracting during almost the entire diastolic period of the left ventricle, the contractions spreading from base to apex and ending with the apex beat. The theory I have ventured to bring forward is as follows: 1. That in consequence of the different tensions existing in the right and left ventricles these cavities, under the circumstances of mitral constriction, do not act synchronously. 2. That the base to apex portion of the right ventricular systolic wave occurs when the left ventricle is in diastole. 3. That the right ventricular muscle vibrations are heard during the diastolic period and that they gradually increase in intensity towards the end of it. 4. That the so-called presystolic bruit is composed of three parts—(*a*) right ventricular muscle vibrations, (*b*) an auricular systolic bruit, and (*c*) a slapping first sound; the muscle vibrations being the cause of the peculiar and intimate relation between the auricular systolic bruit and that sound. 5. That in double mitral murmur these vibrations prevent the distinction between the two murmurs which is heard in the double aortic murmur.

The supporters of the "Barclay theory" have, I think, erroneously assumed that the right and left ventricles act

[1] THE LANCET, March 2nd, 1872, p. 284.
[2] THE LANCET, Oct. 1st, 1887, p. 651.
[3] THE LANCET, Oct. 19th, 1889, p. 782.

synchronously. We know that in many cases of mitral stenosis the left auricle is incapable of contraction, and that the circulation is carried on by the hypertrophied right ventricle and pulmonary arteries. The question may therefore be asked, Could the circulation be carried on in a case of mitral stenosis if the two ventricles acted in perfect synchronism? I do not think it could.

I am, Sirs, yours faithfully,

C. C. GIBBES, M.D. Aberd., M.R.C.P. Lond.

arkston-gardens, S.W.

THE PREVENTION OF SYPHILIS BY TREATMENT.

To the Editors of THE LANCET.

SIRS,—Syphilis being a contagious disease ought if possible to be prevented either by notification and prosecution of persons who voluntarily infect their neighbours or by some other legal plan. Professor Alfred Fournier has favoured me by sending me his recent pamphlet on the prevention of syphilis by treatment, from which it appears that he considers the Parisian plan which has had so many imitators in Europe of no service for prevention and recommends simply our present British system of hospital treatment of the poor affected with the disease. Here are one or two citations from his pamphlet: "Applied from early times to the repression of prostitution administrators and police measures have without doubt accomplished in relation to the prevention of syphilis all that they are capable of accomplishing. But without refusing to recognise the benefits (as to which I would be on my guard as against ingratitude and error) one is yet free to regard them as insufficient for their purpose, it being understood that their action is necessarily limited to public control. The police only supervise some thousands of women whilst there are eight or ten times that number who spread abroad syphilis professionally among the Parisian population. The police conscientiously do all the good they can and we should be thankful to them, but they are powerless to stop the overflowing current of venereal maladies. In spite of the system syphilis still exists among us as it did in the past as an incurable ulcer attacking society. I believe that it has increased, although sufficient and reliable statistics are not obtainable. This is also the belief of my colleagues whom I have frequently heard saying, 'Syphilis is to be seen every day, everywhere, and worse than ever.' At any rate, I am in a position to affirm without fear of contradiction that at the present day syphilis flourishes. It abounds in hospital wards, in the hospital and out-patient departments, and in our private consulting-rooms, &c., &c."

At the Portsmouth meeting of the British Medical Association some speakers in the debate on the Prevention of Venereal Contagions seemed to wish to introduce the Parisian system into London. The above cited remarks from Professor Fournier show that this plan is always a failure because so disgracefully unjust in its application. Perhaps notification might succeed if it were anonymous, as it would give us correct information as to the extent of the evil and allow us to formulate plans for its prevention.

I am, Sirs, yours faithfully,

CHARLES R. DRYSDALE,
Consulting Physician to the Metropolitan Hospital.

London, Jan. 29th, 1900.

GRIFFIN *v.* PEIRSON: AN APOLOGY.

To the Editors of THE LANCET.

SIRS,—As the solicitors for the Medical Defence Union, Limited, acting upon their instructions for Mr. Griffin of Banbury in the libel action of "Griffin *v.* Peirson," which was entered for trial at the present Oxford Winter Assizes, we beg to hand you a retractation and apology signed by the defendant and witnessed by his solicitor for publication in the press. May we, therefore, ask you to be good enough to insert it with this letter in the next issue of your journal.

We are, Sirs, yours obediently,

HEMPSONS.

35, King-street, Cheapside, London, E.C., Jan. 30th, 1900.

APOLOGY.

Whereas I the undersigned Alfred Mellett Peirson otherwise known as "Lennox" of No. 3D, Blenheim-mansions, Edgware-road, London, spoke, published, and caused to be circulated in the months of May and July, 1899, certain slanderous and libellous statements concerning Dr. Innes Griffin of Banbury, Oxfordshire, in relation to an operation which he had performed upon a patient for a mastoid abscess in the month of October, 1898, and by which I imputed to Dr. Griffin a want of professional care and skill in connexion with the operation. And whereas Dr. Griffin has taken action against me for libel in the Queen's Bench Division of the High Court in consequence of the statements published and circulated by me as aforesaid but has kindly consented to forego such action on my withdrawing each and all of the said statements and making the apology herein contained and paying a certain agreed sum for costs: Now I, the said Alfred Mellett Peirson, otherwise known as "Lennox," hereby declare that the said statements so published and circulated by me as aforesaid are each and all of them without any foundation whatsoever in fact and I hereby apologise fully, freely, and unreservedly to Dr. Griffin for having published and circulated them and desire to express my sincere regret and contrition to him for any pain and inconvenience which I may have caused him for having so acted as aforesaid and I am grateful for the leniency shown to me by Dr. Griffin. And I hereby authorise Dr. Griffin to publish this apology in such manner as he may think fit.

Dated this 29th day of January 1900.

Witness—JNO. E. CLAY, Solr., 185A, Marylebone-road, W.

A. M. PEIRSON.

"PROPOSED PUBLIC MEDICAL SERVICE."

To the Editors of THE LANCET.

SIRS,—Referring to Dr. Rentoul's letter *re* the above scheme I have not had the good fortune to see his rules and suggestions, but hope to do so in the near future. As regards a "cash fee department," by this I understand an abolition of the contract system in favour of "cash fees" at a reduction from the practitioner's ordinary charges. This scheme I venture to consider as quite inadequate—if not totally impracticable—as a means of competing with the medical aid and similar institutions. I had the good fortune to be present at two or three debates upon this very subject, when after considerable discussion the idea was dropped as impracticable for the purpose intended—namely, to compete with associations that at present undertake contract work. The public are wedded to the provident or contract system and will not readily abandon it. I am pleased to see that Dr. Rentoul so far agrees in that he has recommended a provident department also.

The proposed service would exactly fill Dr. Rentoul's second suggestion—namely, "to enable practitioners to refuse to have anything to do with club or contract work save through the service," and with that object in view the rules have been so framed that every practitioner is eligible to join whether holding a medical aid appointment or not, but in the case of certain appointments that may after due consideration be condemned by the executive of the service then a long but definite period will be given to the practitioner to enable him to decide whether he will continue a member of the service and work up a connexion therein or will continue to hold the condemned appointments and resign his membership or be expelled failing resignation. To prevent wholesale condemnation of appointments without most careful consideration it is provided that the executive shall not condemn any appointments until after the expiration of a fixed period from the inauguration of the service or until they have consulted the district committees as to the advisability of so doing.

Dr. Rentoul's fear "that such a service would run a great danger of being ruined by not having a rigid 'wage limit' for membership and thus hospital abuse if corrected at the hospital would not be cured but only transferred to the service ..... doctors are a most unbusinesslike class," is worth careful consideration. The first portion I would meet by saying that it is provided that the management and control are solely in the hands of registered medical practitioners duly elected from and by the general body of members of the service. If they found that a certain wage limit did not pay they could raise the premium or lower the wage limit, at any rate for all new patients. The latter remark is more difficult to combat, but an endeavour has been made to do so by framing the rules on business lines and embodying in them certain rules and directions as to working, failure to comply with which may be visited by a fine; moreover, no one man is entirely trusted to work the details either of the district committees or executive council, but a system of checks has been adopted by which the various officers check each other off and are again checked off by the district committee who in their turn are responsible to the executive.

As regards changing the name from the "Public Medical Service" to the "Provident Medical Service" I can see no grave objection to this course if so desired when the scheme is to be started, though personally I consider that the word

publi:" serves more clearly to distinguish the service from already existing "provident" associations which are only provident in name—as, for example, the Coventry Provident Dispensary, to combat which the Coventry Public Medical Service was successfully established. Having resided many years in Coventry, I am able to state that, at least until lately, the service was working well, with satisfaction to the staff and to the patients, and to the best of my knowledge it is still flourishing. What we now require is an amalgamation of the various public medical services into one large association. I am, Sirs yours faithfully,

York-road, Ilford, Jan. 29th, 1900. MURTAUGH HOUGHTON.

"THE UNIVERSITY OF LONDON ELECTION: THE CANDIDATURE OF DR. W. J. COLLINS."

To the Editors of THE LANCET.

SIRS,—Dr. Savill is quite correct in supposing that my letter of Jan. 13th was intended to indicate decided opposition to the candidature of Dr. Collins, though whether it can be called "virulent" or not must be a matter of opinion. He charges me with "at least one" misstatement of fact, but he does not say what even that one is. Dr. Savill misses the point at issue, which is not whether Dr. Collins is a man of "vast knowledge" or whether he took a distinguished position at his university examinations. The latter statement may be fully admitted and the former may also be conceded, for the sake of argument, without either of them weakening the position taken up in my letter. Indeed, they strengthen it. For the vaster Dr. Collins's knowledge and the higher his academic distinctions the more they would seem to reflect on the intelligence of the great majority of the medical graduates whom he aspires to represent and who differ with him so largely on one of the most vital questions on which the medical profession is brought into relations with the general public. I would appeal to the "hundreds" of Dr. Collins's fellow graduates, and especially to the "large number of medical and surgical alumni" of the University of London who are claimed as supporting his candidature, to consider carefully what his success will mean. It will mean that the pertinacious emissaries of the National Anti-Vaccination League, who now put Dr. Collins forward as one of their most authoritative scientific patrons, and who quote the fact of his having been Chairman of the London County Council as evidence of his distinguished public position, will then be justified in representing him as the acknowledged mouthpiece of the medical graduates of the University of London. How any London graduate who not only believes in vaccination, but who believes also in the importance of pressing its adoption on the public, can lend himself to such a candidature is one of those curious problems in psychology and morals which are an inexhaustible puzzle. Dr. Collins would be as inappropriate a representative of the medical graduates of the University of London in Parliament as he would be a fitting one for Leicester.

I am, Sirs, yours faithfully,

M.D. LOND.

LITERARY INTELLIGENCE.—We are glad to know that the New Sydenham Society proposes to reprint in a forthcoming volume of selected papers an essay first published in 1840 by Mr. George Bodington, who organised at Sutton Coldfield, in Warwickshire, an institution for the treatment of consumption on the liberal diet and open-air plan. He anticipated most completely all that has recently been written abroad and at home on this topic. He published a booklet of some 60 pages describing his plans and his success. The essay was referred to in THE LANCET of Nov 26th, 1898, p. 1433, in a letter from Dr. A. Tucker Wise, but the matter was brought to the notice of the council of the Sydenham Society through Dr. T. Barlow, by Dr. S. T. Pruen of Cheltenham. Apart from its intrinsic interest it is a matter of justice to an English surgeon of the past generation that it should at the present juncture be re-published. We understand that it will be accompanied by the original paper of Dr. Hodgkin describing the disease which now goes under his name and by a selection from the eminently practical memoirs on obstetric subjects of the late Dr. Braxton Hicks.

THE ORGANISATION OF THE PROFESSION.

THE CORK MEDICAL PROFESSION ASSOCIATION: THE HISTORY OF THE ORGANISATION AND OF THE FIVE YEARS' STRIKE.

(FROM OUR SPECIAL COMMISSIONER.)

CORK holds an honourable position in the vanguard among those towns where the first efforts were made to organise medical unions. It was here that one of the first, if not the first, medical strike occurred, and to a certain extent it may be said that this strike is still continuing. Indeed, this seems to be the way with medical strikes. There is a period of sharp, acute struggle, certain positions are taken, others are lost, then both parties remain facing each other for years. The violent struggle is over, but peace is not made and both sides wait passively for the slow process of disintegration which in the course of time will gradually disperse what power of resistance remained. From time to time echoes of the struggle at Cork have reached our shores, and paragraphs concerning various episodes in the contention have appeared in the papers, but there has been no systematic attempt to give a complete history of the movement. So far as limited space will allow I shall attempt to supply this deficiency. This account will show what organisation can do and will constitute an encouraging example for the members of the profession practising in other towns.

Some 60 years ago the City and County of Cork Medical and Surgical Society was founded. Practically it was simply a medical social club. The members met and dined and read purely scientific papers. But on May 13th, 1892, they held a meeting to consider the advisability of re-establishing the Cork branch of the British Medical Association, either to replace or to act in conjunction with the Medical Society. For this purpose 11 practitioners signed a circular convoking all the members of the British Medical Association established in the locality to meet on June 4th. The object of this meeting was not merely to resuscitate the Cork branch of the Association but to draw up a plan of action dealing with ethical questions that concern the medical profession. The meeting was held and the following resolution was carried unanimously:—

> That the branch be re-established and be peculiarly devoted to the discussion of ethical questions and in no way to interfere with the work of the Medical Society.

The meeting also elected a committee to draw up rules, and a general meeting to approve the same was convoked for June 18th. By that time 40 practitioners had already joined; and even at this early date the question of canvassing by the agents of benefit societies and medical aid associations was raised. So quickly did the interest in this question spread that the temporary council of the newly re-constituted branch of the British Medical Association found itself impelled to convoke a meeting of the South of Ireland Branch Council to consider the whole question of club practice or contract work. This meeting was held on July 13th, 1892; and on that occasion Dr. Ashley Cummins complained that the medical officers of the clubs were sometimes called upon to attend the country relatives of members though the latter had only come to town for a short visit. A few days later another meeting was held, and then it was agreed to draw up a circular containing 12 questions to be sent to all the members of the profession in Cork and its neighbourhood with a request that they would answer the questions. On Oct. 12th following a meeting was held to consider the replies that had been received, and these replies supplied the basis of the rules that were ultimately drawn up. Thus it will be seen that great care was taken to ascertain what were the needs and opinions of the profession before attempting to impose rules and obligations. This is very important, for a constitution that is workable, that is freely accepted even though it may have some defects, is better than a model constitution which is not fully appreciated or approved.

With some slight modifications and additions, the rules then adopted have been maintained to the present day. The most important are those which deal with contract work.

First it is stated that the scale of remuneration for such club practice shall be fixed in proportion to the income of the subscribers or members, and that, when the income cannot be ascertained, it shall be estimated according to the valuation of the dwelling-house. If the member's income is under £100 or the valuation of his dwelling not more than £7 10*s*., the annual subscription shall be 7*s*. 6*d*. Above these figures but under £200 income or a £15 valuation of the dwelling the subscription must be 15*s*., and no one whose income is above £200 shall be admitted. The maximum distance for attendance is two miles from the General Post Office. Then we find the fundamental rule and principle of all unions that "no medical man shall take an appointment from which another retires in consequence of his society or club not complying with these rules." But another rule states that when a medical officer retires from a society because he has not been fairly treated he must first submit his case to the committee and must not send in his resignation till such action has been approved by the committee, and then he will be supported by all the members of the profession. In regard to the detail of the work there is a rule to the effect that if a member subscribes to two societies he shall only call upon the services of the medical officer of one of these societies. If the medical officer of the other society is also called in then he must be paid the fee of a consultant. An extra charge is made for anæsthetics, midwifery, and premature confinements, and this shall not be less than a guinea. The above charges include attendance on the family, but a rule stipulates that this shall mean only relatives who are entirely dependent on the member. Another rule demands the absolute abolition of all personal canvassing for clubs and benefit societies. The secretaries of the different societies are called upon to supply the committee with a list of their members which will be held as private and only accessible to inspection by the committee assembled. These rules apply to all contract work except when the contract is for £5 per annum and upwards for each member and his family.

Such are the main points which were agreed upon during the year 1892; but of course here, as elsewhere, the difficulty arose as to how these rules were to be enforced. Practically the only weapon is the "boycott," and this is established by Rule 16:

> That any member of the medical profession who wilfully violates these rules be excluded from professional intercourse.

Hardly had these principles been discussed and accepted than an occasion occurred to enforce their application. In March, 1893, Dr. Collins informed the committee that he proposed to resign his position as the medical officer of the Bakers' Society. This society paid him a fixed salary of £30 a year, and as there were 120 members this made only 5*s*. instead of 7*s*. 6*d*. per member; therefore the proposed resignation was approved. A few weeks later (on May 27th) the branch as newly re-constituted was officially recognised by the Council of the British Medical Association. In a short time many other questions began to claim the attention of the members. Prominent among these was the question of hospital abuse, and at the same time many further attempts were made to persuade all the practitioners of Cork and the neighbourhood to join the organisation. Early in 1894 a resolution was passed and forwarded to all the Members of Parliament elected in Munster in favour of a Bill for the superannuation of Poor-law medical officers. After several discussions on these two questions it was resolved:

> That two representatives from each hospital staff be elected to meet a chosen deputation of the Poor-law medical officers.

This meeting took place in May and four hospitals and the Poor-law Medical Officers' Association were represented. They adopted a resolution affirming the existence of many abuses and calling on the management of the hospitals to help to abolish the same and to form for that purpose a joint sub-committee. At about the same time the medical officer of the Central Hall Methodist Benefit Society was called upon to give an account of himself and he replied that he had not infringed any of the rules. The question of the wage-limit was again very fully discussed and the limit already established was not only confirmed but on Oct. 25th, 1894, it was decided to send a circular explaining these conditions to all the clubs, benefit societies, &c. It was also agreed that though 7*s*. 6*d*. was to be the minimum charge for a member and his family this should not include drugs. The medical officers were as a general rule to prescribe but not to provide drugs. The dispensing chemists, who throughout have sided with the medical men in the struggle, though unsolicited, came forward voluntarily and offered to contract with all members of clubs who accepted the conditions of the medical profession and to supply them and their families with the necessary drugs for 5*s* a year. All the dispensing chemists of the town have now agreed to these conditions, so that the members of the clubs can select any chemist according to their convenience and preference.

The position, it will be seen, differs considerably from what generally prevails in England. Though the wage-limit of £100 a year is high, the subscription of 7*s*. 6*d*., plus 5*s*. for drugs, would also be considered high in England if it applied to a single individual. But at Cork single men hardly ever join benefit societies or clubs and the subscription entitles all the family to medical aid and medicine if they are dependent on the members for their sustenance. It must also be borne in mind that marriages are more frequent in Ireland than in England and there is not so large a proportion of single men. But still the question will be asked. What becomes of these single men? for they exist though they may not be numerous. Are they forced to pay the traditional guinea fee? I was assured that the guinea fee was a pure fiction. The workman pays what he likes or what he can afford, and it does sometimes happen that they do pay the full guinea; but then it covers a long bout of illness and not, as sometimes imagined, a single consultation.

In answer to the circular addressed to all the clubs, only two Jews' societies and four other clubs replied accepting the terms laid down by the medical men, and these were but small organisations. 20 clubs or societies refused to entertain the rules. These 20 recalcitrant societies employed nine medical officers, and at the end of December, 1894, their nine medical officers without hesitation simultaneously forwarded, in registered letters, their resignations. To prevent any undue suffering among the members they offered to continue attendance for one month, but would cease further attendance if by that time their conditions were not accepted. In the interval the clubs held a big meeting at which it was decided that the rules as proposed by the medical men should not be accepted and that they would advertise and import medical men from other districts to do the work. Thus, at the beginning of the month of February, 1895, the strike of the Cork club medical officers commenced. The clubs succeeded in importing four outside medical men to do the work of their nine medical officers who were on strike. The new-comers were approached by the medical men of the town and their true position was explained, but they were already well acquainted with the situation and showed that they had no feeling of solidarity with the other members of the profession to which they belonged. The acuteness of the struggle which was now beginning forced the Cork and South of Ireland Branch of the British Medical Association to alter its constitution. Several practitioners who were involved were not members of the British Medical Association and yet it was indispensable that they should be members of the local medical organisation, which, indeed, must be a union of the entire profession. Therefore the title was changed to that of the Medical Profession Association, including in its ranks the local branch of the British Medical Association and all other medical men practising in the district. The members of the profession being thus firmly welded together a strong feeling was manifested that those who fought for the interests of all should not be allowed to suffer. It was therefore resolved to start a strike fund, and it was willingly agreed that the senior practitioners should give £20 during the first year. The others might give less, but the minimum was £5. In this manner nearly £400 were realised and the greater part of this sum was subscribed in a single afternoon. This in itself suffices to show how strong was the feeling and how enthusiastic was the support given to the movement. Outside help was also obtained, notably from THE LANCET and the *British Medical Journal*, the subscriptions received through these papers amounting to about £125.

In one respect, however, the movement was badly managed, and the same blunder has been committed by medical men in other towns. They failed to conciliate the working classes. As the action they were about to take affected principally the working classes it is obvious that their first care should have been to educate the working men to a true understanding of the purpose which they

had in view. This should have been a movement of the working class and the medical men against interlopers belonging to other classes. For instance, a large tradesman of the town belonged to one of the benefit societies, and so did a manufacturer and a professional man. What right had these men to be in an organisation created exclusively for the wage-earning class? Several club members possessed incomes up to and even exceeding £1000 a year. Some of them were justices of the peace, others managers of large businesses. It will hardly be credited, but it is the fact, that a few of these wealthy people not only availed themselves of the assistance of the club medical officer, but actually asked for certificates of illness so that they might claim the 7*s.* 6*d.* weekly sick allowance intended to help poor men in the hour of need. The presence of these wealthy members in the ranks of the benefit societies entirely altered the character of such institutions. Instead of being organisations that might justly claim general sympathy and approbation as teaching poor men to be provident, they had been allowed to provide rich men with the means of making niggardly economies. They robbed the medical man of the time he should have devoted to the care of the poor. Therefore it was to the interest of such clubs not to accept wealthy members. But all these points were not driven home and even the trades-union papers abused the profession. As for the wealthy members of the clubs, who were the cause of all the trouble, they complained lustily against their medical officers on strike, but when they fell ill they sent for these medical men and preferred to pay them proper fees to employing the intruding medical men in the service of their clubs. Indeed, these interlopers were in no wise popular and one of them was publicly snowballed by some medical students. This led to proceedings at the police-court, and on Feb. 19th, 1895, one of the students was fined 10*s.* and the others were discharged. In spite, however, of police prosecution and the active support of the clubs the four imported medical officers have not prospered. The medical man who was snowballed died the following July and the clubs were not able to import anyone else to take his place. No professional intercourse was held with these four club medical officers. If one of their patients wanted a consultant the patient was first compelled to dismiss his club medical attendant. Several such cases occurred. Nor did the intruding medical men succeed in making friends in the town.

In August, 1895, the mayor of Cork made an attempt to settle the dispute, and persuaded delegates from each side to meet. This conference was amicable and at one moment it seemed as if peace would be concluded. The delegates of the clubs seemed to recognise that the rules drawn up by the medical men were reasonable and they presented to the medical men for signature a document which the latter imagined to be a copy of these rules. Acting in confidence the medical men signed it, and only afterwards discovered that it was not a copy of their own rules, but that those rules had been very much altered. This caused a great disturbance, as, of course, the signatures given under such a misapprehension were held to be valueless. The clubs also insisted that the remaining three medical practitioners whom they had imported into the town should be maintained in their position and recognised by the profession. This stipulation was absolutely inadmissible; consequently the dispute continued and became more and more venomous.

While the strike was progressing several speculating companies sent agents to Cork and tried to profit by the dispute to establish branches of their insurance businesses. The first in the field was the National Medical Aid Society, Limited, but all the local practitioners refused to have anything to do with this venture. Then the Canadian Order of Foresters wanted to establish a branch at Cork and they were followed by the Rechabites, but no allurements could persuade any of the Cork practitioners to accept the offers which they made. The endeavours of these societies or companies awakened the profession to the realisation of a danger for which they had not yet made any provision. Consequently a resolution was passed on Jan. 1st, 1896, to the effect that no new medical aid society or club should be formed in Cork unless it had obtained the approval and consent of a general meeting of the medical profession. This led to a renewal of proposals that had formerly been made in favour of establishing some sort of cooperative provident organisation to be managed by the medical practitioners themselves. A committee was now appointed to study the question and propose rules, ways, and means.

In January, 1896, the first balance-sheet of the strike fund was issued. This showed that £219 4*s.* 8*d.* had been paid out as strike allowance and that £306 16*s.* 9*d.* still remained in hand to continue the struggle. The payments were made in proportion to the former known receipts. The strike allowance given was equal to two thirds of the annual receipts, except in those few cases where the club medical officer provided medicine, then a further reduction of 3*s.* per annum per member was made. It was found that two-thirds of the annual sum received from the clubs against which the strike had taken place was ample compensation, because some of the patients followed the practitioners, and out of the old clubs there was the means of forming the nucleus of a private practice. Indeed, this seemed so promising that it soon became probable that the strike allowance need not be continued for more than one year, and this proved to be correct. The medical men who were on strike had in a year's time built up new positions, and when, after some 12 months, the strike allowance by general consent ceased there still remained £80 in hand. Nevertheless there are considerable impediments in the way of reform. For instance, if a member of one of the clubs against which the strike still continues does not call in the club's medical officer he cannot get a medical certificate that will be recognised by the club and on which sick allowance will be paid. Therefore, if a member of a club calls in one of the practitioners who are on strike he has not only to pay this medical man the usual fees but he loses his right to claim sick allowance. Yet one of the medical officers on strike had, on the day I met him at Cork, been called in by one of the club members and was paid £1 for his services, and the patient had further the courtesy to apologise for having caused him to come out during exceptionally bad weather. Indeed, the medical officers on strike now make larger incomes and work less than they did before the strike. One of the medical officers of the clubs explained to me that before the strike he made a list of all his visits to the houses of the members of his club, and he found that his receipts were equal to 4*d.* per visit, and this did not include the numerous consultations which he gave at home to the club patients who were well enough to come to his surgery. Thus by allowing 4*d.* for each visit the consultations at his surgery were given gratuitously. He then received 6*s.* a year from the Foresters' Benefit Society and had to attend whenever called upon to do so. Now he is at liberty to refuse. But after the strike he was sent for by one of the Foresters and received during the course of the year £20 from this one patient, whereas on the old terms it would have taken 66 years to earn the same amount. Other members of the Foresters' Society, rather than lose their medical man, pay him a retaining fee of £5 a year while formerly they only paid 6*s.* From another patient he had received £46 in four years instead of 24*s.* Another medical officer told me that he had two patients at £5 a year each instead of 10*s.* The fact that such high payments are freely made shows that these patients are well enough off not to have any need to join a working men's provident organisation.

During the years 1896 and 1897 nothing more of any great importance occurred except that the better class of trained nurses and midwives joined the medical men's strike. They refused to attend any of the club patients who had not accepted the terms which the Medical Profession Association sought to impose. During the following year very ardent discussions were held as to the possibility of the medical practitioners themselves establishing a provident or benefit society under their own management. This was finally accomplished and the society was floated and registered in January, 1898, under the title of the Cork Medical Benefit Association. During this year there was a great disturbance within the ranks of the Church of Ireland Young Men's Association. This organisation had a medical aid branch under one of the three imported medical men remaining in the town. But now their medical officer determined to leave Cork, and, strange to say, before going he advised all his patients to accept the terms of the Medical Profession Association. The majority of the members of the Church of Ireland Young Men's Association were disposed to follow this advice, but the minority wanted to follow the opposite course. The question was put to the vote and the majority carried its point. Then the

minority made so great a disturbance that the committee of the Church of Ireland Young Men's Association proposed to dissolve their connexion with them; but before this could be done a new managing committee had to be elected. The election was fought out exclusively on the question of the minority and all the candidates were defeated. The latter appealed to the entire association; therefore a general meeting was held and here again they were beaten. After this a split took place; the minority formed itself into a separate organisation with a medical man in attendance. The majority kept possession of the premises of the association and are now working in complete harmony with the Medical Profession Association. They have prospered so rapidly that there is a larger number of members than there was before the split.

Other successes have been achieved. Thus the North Parish Sick Poor Society abandoned the struggle and reappointed their old medical officer under the rules established by the profession. During the year two more societies seceded—namely, two branches of the Irish National Foresters, with 190 members and 90 members respectively, and took back their former officer according to rule. Also, one of the two remaining intruding medical officers recently left Cork and has been replaced by a medical man who had only just become qualified and had not yet been in practice. Only 12 societies are still standing out and these two medical officers have to attend to all their members. It is true that, with the exception of the St. Finnbarris Society, which has increased its membership to 280 members, the 12 societies are not prospering. The membership of the Ancient Order of Foresters has fallen from 234 to 100. The St. Nicholas Society and the Queen-street Society have also suffered from a great decrease of membership. The Central Hall Society out of 80 members had 20 enjoying incomes of from £200 to £500 a year. This society is now in a bad financial condition, its membership is reduced by about half, and they belong to a much poorer class. Thus the hostile forces are gradually dwindling; the imported medical officers have been reduced from four to two. On the other hand, the Cork Medical Benefit Association is making good progress. The members have the choice of 12 medical officers and of all the consultants. Nor are any of these medical officers likely to be overworked and therefore compelled to neglect their patients, for there is a rule that they must not have more than 400 subscribers on their books. There is also a rule that no fully recognised hospital surgeon or physician shall take club practice, thus giving the younger practitioners a better chance of making their way; but all practitioners may make individual contracts if for not less than £5 without medicine. Though in the Directory the names of 71 medical men will be found as residing at Cork, many of them are not in practice, have died since the publication of that list, or are now away in South Africa. In actual practice there are not more than 56 medical men, including the two imported. The secretary, Mr. Philip G. Lee, informs me that when a meeting of the Medical Profession Association is convoked he sends out 49 notices. Thus it will be seen that the members of the profession at Cork are almost unanimous and are nearly all in union. It may therefore be fairly anticipated that complete victory is only a question of time. This is the more certain as not one single member of the union has deserted the cause. Such devotion and steadfastness are all the more admirable as there were many and great temptations held out to the junior and less prosperous members of the profession. Yet it has been a hard fight and the means employed to attack the medical profession were not always fair and above-board. Thus a local paper published antagonistic letters apparently signed by fictitious names. In any case registered letters were sent to the supposed authors of these communications, and as the letters were returned by the post-office it would appear as if the correspondents did not exist. All these and many other manœuvres have, however, proved futile. The strike has lasted five years. Several of the clubs have given way and the medical officers who resigned their positions are now making better incomes with less trouble than they did formerly, so it is quite certain that they will not give way. Under these circumstances the Cork medical practitioners are quite satisfied to hold out another five years if necessary. They have only to remain true to each other and their position must improve from day to day.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Dose of the Plague Prophylactic.—Official Instructions about Inoculation.—The Progress of the Epidemic.—The Need for a Pasteur Institute.—Plague Measures in Bengal.

EXPERIENCE has shown that the doses laid down in the instructions for the use of the plague prophylactic by M. Haffkine require revision. It has been found that children are less affected by inoculation than adults and can be given proportionately larger doses. Accordingly new rules have been promulgated and official instructions for the use of the plague prophylactic have been sent out. Considerable improvement has been effected in the matter of packing and fitting up the bottles. At one time this appears to have been carried out very insecurely and many bottles of the fluid were found to have undergone decomposition. The following dosage is now ordered:—

	If the dose marked on the bottle is 2·5 c.c. then give—	If the dose marked on the bottle is 5·0 c.c. then give—
Below 2 years	0·5 c.c.	1·0 c.c.
From 2 to 5 years	1·0 c.c.	2·0 c.c.
„ 6 to 11 „	1·5 c.c.	3·0 c.c.
„ 12 to 15 „	2·0 c.c.	4·0 c.c.
„ 16 to 50 „	2·5 c.c.	5·0 c.c.

It is thought that persons over 50 years of age should get 0·25 cubic centimetre less for each decade above that age.

The official instructions contain the following paragraph indicating the usual symptoms of plague inoculation: "The symptoms commence, as a rule, three to five hours after inoculation and consist chiefly of swelling and pain at the seat of inoculation and of a rise of temperature. The pain is felt particularly on movement of the part. The fever is accompanied by general discomfort usual to this condition. No treatment of the symptoms is required beyond applying ice for the relief of headache, if any is felt, and enjoining some rest. General symptoms subside after 24 to 36 hours; the pain at the seat of inoculation lasts for three or four days, disappearing gradually; a painless induration remains for some time longer. It is desirable to produce a rise of temperature to at least 102° F. If the reaction is less marked the operation may be repeated three or four days later with the same or an increased dose, according to the result of the first inoculation. There is no harm in leaving a longer interval between the two inoculations. No changes in diet or occupation are necessary, beyond if possible ensuring some rest. Bathing in the open air should be avoided for some days. A simple purgative may be given 24 hours after the inoculation."

Beyond the very serious increase of mortality in Bombay city there is little to record as to the course of plague in Western India. In Bengal, however, the long-dreaded development of the epidemic seems to have begun in earnest. Reports from Barisal, in the delta of the Ganges, show that the disease has been very rife and I now hear that it has broken out in Patna city. Official returns keep these facts silent. In Calcutta the disease seems to be subsiding after the long-continued low mortality since the outburst last March. The same thing occurred at the corresponding period of the first outbreak, so that a period of quiescence may be expected at least for some weeks. After that interval a renewed development may be expected.

In Bombay city the weekly general mortality has increased from 1642 last week to nearly 1900. These figures mean that there were at least 1200 deaths above the normal. The official returns of plague give less than 400 deaths as due to this disease—a discrepancy which shows palpably the incorrectness of these returns. To cover increased deaths from ordinary diseases it may be therefore safely estimated that there have been *1000 deaths from plague in Bombay city during the past week*. I hear that inoculation is finding more favour in Bombay, but the increased number of applicants seems largely due to private enterprise and to measures of "compensation."

Five weeks ago the general mortality of Bombay city was returned at 1049. Poona and Karachi are now practically free.

The necessity for the establishment of a Pasteur institute in India can be readily seen from the increasing

number of patients sent to Paris from India year by year. From the year 1886 to 1896, that is, during the first 11 years of this treatment, out of 3396 foreigners treated in Paris only 95, or less than one-thirtieth, went from India, while 870 went from England. In 1897, however, out of a total of 175 foreigners no fewer than 33, or over one-sixth, went from India and only 83 from England. In 1898 out of 132 foreigners no fewer than 56, or nearly one-half, went from India and only 25 from England.

An attempt at something like active plague measures by the Bengal Government is notified in the *Calcutta Gazette*. "In any case in which the sub-divisional magistrate or health officer thinks fit he is authorised to isolate the house, village, or part of a village in which a case of plague is believed to have occurred by cordons, patrols, or in such other manner as he may think expedient. When action has been taken by the sub-divisional magistrate or health officer under this rule no inmate of such house, village, or part of a village shall leave the same or shall hold any communication with any other person, and no other person shall enter the same or hold any communication with the inmates except in accordance with such directions as may be given by the sub-divisional officer or health officer." Here it is seen almost for the first time that the health officer is given powers in addition to the civilian officer. The actual carrying out of the measure must, however, devolve on the magisterial authority. If the two officers failed to act in harmony the regulation would of course fall through. The same thing would probably happen if the civilian officer acted in opposition to the health officer and resisted a policy of isolation.

Jan. 11th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Northern Hospital: Annual Report for 1899.

THE number of patients attended to had been 1795 in-patients and 7411 out-patients, involving 26,349 attendances. The hospital contains 155 beds. The ordinary expenditure had been £7305 odd, against £7284 in 1898. There was a balance of £3761 17*s.* 2*d.* due to the bankers of the institution, against £2925 2*s.* 8*d.* in 1898. The outstanding liabilities were £1116 11*s.* 3*d.*, against £945 14*s.* 8*d.* in 1898. The receipts from all sources have been £6469 1*s.* 8*d.* and were derived as follows: legacies, £881 5*s.*; donations, £728 6*s.* 10*d.*; Hospital Sunday and Saturday Fund, £1638; subscriptions, £1858 3*s.* 10*d.*; and other sources, £1363 6*s.* It would have been impossible to have carried on the work that had been done without the Hospital Sunday and Saturday Fund contribution. The new building was nearing completion. One large pavilion and the circular wards were now finished and were partially occupied. The laundry and boiler-house had been in use during the last six months. The other large pavilion had been built and was progressing towards completion. In view of the increased cost of maintenance when the new hospital was completed the committee earnestly appealed to the public for funds. The convalescent fund continued to be of great service. The horse ambulance, now in the charge of the corporation, had been called out 1143 times and was invaluable in cases of serious accidents. The stable accommodation and professional services were still provided by the hospital, hence the committee trust that the former subscriptions to the ambulance fund will be continued. The committee have had to regret the death of Mr. Arthur H. Wilson, which occurred in January, 1899. Mr. R. W. Murray, honorary surgeon to the Children's Infirmary, was appointed his successor in the post of honorary surgeon.

Report of the Liverpool School of Tropical Diseases.

The first annual report of the Liverpool School of Tropical Diseases deals mainly with the work of the school for 1899. The formation of the school was originally suggested at the annual dinner of the Royal Southern Hospital held on Nov. 12th, 1898. A committee was formed under the chairmanship of Mr. Alfred L. Jones. Mr. William Adamson, President of the Royal Southern Hospital, was appointed vice-chairman (representing together with Mr. A. L. Jones the committee of the Royal Southern Hospital), and the following gentlemen were nominated by the public bodies named: Principal Glazebrook and Mr. Charles W. Jones, by the Council of University College; Professor R. W. Boyce and Professor A. M. Paterson, by the Senate of University College; Professor Carter and Dr. Alexander, by the Medical Board of the Royal Southern Hospital; Mr. J. O. Strafford and Dr. E. Adam, by the Chamber of Commerce; Mr. C. Booth, jun., and Mr. J. W. Hughes, by the Liverpool Steamship Owners' Association; and Colonel Goffey and Mr. J. Chadwick, by the Liverpool Shipowners' Association. Professor Boyce was elected Dean of the School, Mr. J. O. Strafford honorary treasurer, Mr. A. H. Milnes honorary secretary, Major Ronald Ross, late I.M.S., lecturer, and Dr. H. E. Annett demonstrator, and the school was formally opened on April 22nd, 1899, by Lord Lister. A subscription list, headed by the chairman with a contribution of £350, to be paid yearly for three years, was opened and the total amount subscribed in 1899, including fees and other items, amounted to over £3000. During the early part of the year Dr. Van Neck, a delegate of the Belgian Government, attended to observe the work for the purpose of reporting to the Minister of Education in Belgium. The year's work consisted of (1) a lecture delivered three, four, and sometimes five times each week by the lecturer on tropical medicine, illustrated by lantern and microscopical demonstrations; (2) clinical instruction in cases of tropical disease at the special ward of the Southern Hospital twice or three times a week by the honorary physicians of the hospital; (3) instructions in special clinical methods in connexion with tropical diseases by the lecturer and demonstrator of tropical medicine; and (4) practical work and demonstrations on the parasitology, bacteriology, and pathology of tropical diseases by the demonstrator at the Thompson-Yates Laboratory, University College. Two special memoirs have been issued by the committee, an account of the first of which will be found in another column. The hospital report shows that in all 176 cases were treated, of which 152 were malarial fever cases, two malarial neuritis, three blackwater fever, five dysentery, three sprue, one diarrhœa, one Malta fever, five beri-beri, two hepatic abscess, one scurvy, and one bilharzia disease. Out of all these only six patients died. The nationalities of the patients were as follows: English, 151; Norwegian, five; German, three; Finnish, three; Swedish, two; Lascar, three; Italian, two; Chinese, two; and American, Dutch, Spanish, Malay, and Austrian one each. The interesting points in connexion with this table are (1) the variety of diseases treated; and (2) the different nationalities of the patients. With more accommodation the list will, no doubt, be largely extended, but as it stands it thoroughly justifies the establishment of a School of Tropical Diseases in Liverpool. The most important work of the school was, of course, the malaria expedition to the West Coast of Africa, the members of which were Major R. Ross, late I.M.S., Dr. H. E. Annett, Dr. R. Fielding-Ould, Mr. E. Austen of the British Museum, and Dr. Van Neck. The work of this expedition was chronicled in our pages at the time and the power of the anopheles to transmit quartan as well as the other fevers was fully demonstrated, thus confirming the results already arrived at by Grassi and Bignami.

Jan. 30th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

ON Jan. 25th a warrant was granted to the managers of the Edinburgh Royal Infirmary by the Edinburgh Dean of Guild Court to erect new pavilions at the Royal Infirmary. These pavilions are to comprise the ear and throat pavilion and the ophthalmological pavilion. They are to be placed on ground partly occupied at present by old houses in Lauriston-lane and partly by the old laundry. The pavilions will lie east and west instead of north and south as do the old pavilions. The ear and throat pavilion will consist of an administrative portion in the centre three storeys high with wings two storeys in height. On the ground floor is a large waiting-room for out-patients with separate entrance, an examination room, an operating room, and a large operating theatre. On the upper floor are two wards to accommodate eight patients each and two wards for two patients. On the attic floor of the central

portion are nurses' and servants' bedrooms, bathrooms, &c. The ophthalmological pavilion is to be constructed after a similar plan, but will be somewhat larger, the central portion being four storeys high and the wings three storeys in height. The pavilions will be carried out in the same style as the Diamond Jubilee Memorial Pavilion which is now nearing completion. All the floors are fire-proof, the warming will be carried out by steam-pipes and radiators, and the ventilation will be effected by exhaustion by means of electric fans. The new pavilions will be connected with each other and also with the main hospital by a light corridor of glass and wood along which food for the patients in the new wards will be conveyed from the main kitchen which is being largely extended to meet the wants of an increased number of patients.

Edinburgh Medical Missionary Society.

The annual meeting of the Edinburgh Medical Missionary Society was held on Jan. 25th. The chair was taken by Sir William Muir. The report stated that during the year 8752 new cases had been dealt with at the Livingstone Dispensary in the Cowgate. Dr. Main of Hangchow moved the adoption of the report, and was seconded by Dr. Laws of Livingstonia.

Edinburgh Company Volunteer Medical Staff Corps.

The fourteenth annual dinner of the Edinburgh Company Volunteer Medical Staff Corps was held in the Imperial Hotel on Jan. 26th, Surgeon-Captain Hepburn being in the chair. The toast of "The Navy, Army, and Reserve Forces" was proposed by the Rev. G. Marjoribanks, Stenton, and responded to by Colonel J. P. Rooney, R.A.M.C., and Surgeon-Lieutenant-Colonel P. A. Young, 1st Midlothian Volunteer Artillery. The toast of the evening, "The Volunteer Medical Staff Corps," was proposed by Colonel Rooney, and the chairman in acknowledging it said that the company was "full up."

Proposed Sanatorium for Consumptives at Dundee.

At a meeting of the executive committee of the proposed sanatorium for consumptives held at Dundee on Jan. 24th, it was reported that the best site that could be obtained was on the Auchterhouse estate, about two miles from the station, and that Lord Airlie had, through Lady Airlie, intimated his resolution to grant the site as a free gift to the city of Dundee. The committee accepted the site and passed a hearty vote of thanks to Lord Airlie. The site extends to 21 acres, and is from 800 to 1000 feet above the sea. It is sheltered on all sides, and the possibilities as regards water and drainage are satisfactory. Ex-Provost Moncur, who had presented £10,000 to the committee for the erection of the institution, was appointed a trustee together with his son, Mr. Alexander Moncur.

Edinburgh Town Council and Women Sanitary Inspectors.

At a meeting of the Edinburgh Town Council on Jan. 30th among other matters the council took up consideration of two recommendations of the Public Health Committee under re-committed reports, in both of which cases the committee adhered to their former recommendations. The one, for the addition of four male assistant sanitary inspectors for the sanitary department, was agreed to unanimously, but the other, for the appointment of two qualified female assistant sanitary inspectors, gave rise to a somewhat heated discussion. The approval of the latter recommendation was moved by Mr. Pollard and seconded by Bailie Brown, while Mr. Lang Todd, Sir James Russell, and Mr. Auldjo Jamieson also supported the motion. On a vote 21 voted each way and the Lord Provost gave his casting vote against the recommendation.

Typhoid Fever Epidemic in Ayr.

Fresh cases of typhoid fever continue to be reported in Ayr.

The Fife Miners and Medical Fees.

There has been some discussion at the various collieries in the county of Fife during the past month as to the rates to be paid for medical attendance. At present the rate of contribution in some collieries is 6*d.* a fortnight, in others only 4*d.* From a meeting of the Executive Board of the Fife and Kinross Miners' Association, held in December, a recommendation was sent out in favour of a uniform deduction of 6*d.* a fortnight from the wages. At a meeting of the board, held at Dunfermline on Jan. 17th, reports were submitted on the subject, and as a considerable diversity of opinion was shown the board decided to leave the matter in the hands of the men to be decided at their respective collieries.

Aberdeen Royal Hospital for Sick Children.

The ordinary revenue of the Aberdeen Royal Hospital for Sick Children for the 12 months ended Dec. 31st last was £1787 19*s.* 6½*d.*, and the ordinary expenditure was £3333 10*s.* 6½*d.* The number of patients treated in the wards during the year was 758.

Death of Dr. Henry Jackson of Aberdeen.

By the death of Dr. Henry Jackson, which occurred on Jan. 26th, Aberdeen has lost one of its oldest and most respected medical practitioners. Originally trained as a druggist, Dr. Jackson graduated as M.D. at Marischal College, Aberdeen, in 1850, and at the time of his death was the oldest member of the Aberdeen Medico-Chirurgical Society. The deceased was at one time a member of the Aberdeen Police Board and afterwards of the Aberdeen Town Council. He was a total abstainer and was for long a liberal member and office-bearer of the Free Church of Scotland. He was predeceased by his wife and never had any family.

The London Scottish Rifle Volunteers in Aberdeen.

The Aberdeen University Corps are to entertain at a smoking concert the detachment of the London Scottish Rifle Volunteers which has just arrived in Aberdeen in order to be affiliated with the Gordon Highlanders previously to their departure for active service in South Africa.

Jan. 31st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Health of Dublin.

A NOTABLE fall has at last been registered in the death-rate of Dublin, the report by the superintendent medical officer of health for the week which ended on Saturday last, Jan. 27th, being 37·9 per 1000 persons living. The mean death-rate in the corresponding period of the previous 10 years was 39·4 per 1000. The zymotic death-rate was 1·5 per 1000, the mean rate for the corresponding week in the previous 10 years being 3·3 per 1000. These figures show that at least relatively and in comparison with other years there has been a notable, if only temporary, improvement in the health of Dublin.

The Local Government Act.

The Local Government Board have announced that all persons who are paid salaries out of the Poor-rate are disqualified from acting as guardians. This will exclude the county infirmary officials and the asylum officials.

Death of Sir William Miller.

Sir William Miller, M.B. Dub., J.P., High Sheriff for the county and for years mayor of the chief town of Derry, was well known as a physician in large practice and as a public man of whom his fellow citizens felt themselves proud. He held the positions of physician to the Londonderry City and County Infirmary and medical attendant to the Londonderry Prison. Sir William Miller succumbed to an attack of influenza and died on Jan. 29th to the great regret of a very wide circle of friends.

The Condition of the Bones in the Insane.

A contribution to the pathology of this rather doubtful matter has recently appeared in the evidence given at an inquest held at the Richmond Lunatic Asylum, Dublin, on Jan. 24th, in connexion with the death of a female aged 64 years, who had been an inmate of the asylum for 39 years. She died from bronchitis and heart failure, while the post-mortem examination showed numerous fractures of the ribs. There were indications of nine on the left side and of no less than 21 separate fractures, 11 ribs having been broken, one in four places, one in three, and five in two situations. Dr. Rambaut deposed that the ribs on post-mortem examination showed an extreme degree of wasting and were in the highest degree fragile, so that they could be easily broken between the finger and thumb, and without the crackling which usually accompanies a fracture of bone. The bones of the legs and arms were also extremely fragile and could be broken easily with the hands. Mr. Conolly Norman, the medical superintendent of the asylum, gave similar evidence, and stated his opinion that the fragility of the bones and the absence of the

ordinary signs fully accounted for the fractures not having been detected during life.

Health of Belfast.

The death-rate for the week ending Jan. 20th has been from all causes 24·1 and from the principal zymotic diseases 2·3 per 1000. This is less than the average annual death-rate of the 23 principal urban sanitary districts, which was 31·4 per 1000 during the same time. As it appears that there is a large number of deaths of children under six years of age instructions have been given by the public health committee of the city corporation for returns relating to infant mortality to be prepared and submitted to the committee for consideration at their next meeting.

The Belfast Maternity Hospital.

A sale of work in aid of this charity was held in Belfast on Jan. 25th, which it is hoped will bring a large addition to the funds of a very deserving and necessary institution. The committee are most anxious to start the building of a new hospital, which is necessary alike to the poor women of Belfast and to the medical school, but a delay has arisen as they have discovered that they cannot retain the site of the old one without paying a rent equal to the market value of the land which would now be very high. Several new projects are being considered, but nothing so far is finally settled.

The Belfast Hospital for Sick Children.

At the annual meeting of the friends of this hospital, held on Jan. 26th, it was reported that in 1879 there were treated in the wards 474 children (243 medical, 220 surgical, and 11 eye and ear cases), while in the out-patient rooms 5007 new cases were seen (3011 medical, 828 surgical, 863 eye and ear, and 305 dental cases). Dr. Leathem has been elected on the physicians' side, a vacancy having occurred through the resignation of Dr. F. Howard Sinclair. There is a large clinical class of senior students. New cots have been placed in the surgical ward during the year of the most modern design. Financially there is a deficit of £100 owing to the increase of both intern and extern cases; but the legacies of the year enabled all debts to be paid.

The Samaritan Hospital, Belfast.

The annual meeting of the friends of this hospital was held on Jan. 29th. It was reported that 771 patients had been treated in the extern department and 203 in the wards, and of these 180 were operated on. In spite of the grave nature of these operations (35 were abdominal) the death-rate was under 2½ per cent. Financially there was a net balance of about £136. A ladies' committee has been formed and has been found most advantageous to the hospital. They have spent a sum of £200 on necessary repairs to the building. The debt at the end of 1898 was £200, which, thanks to the exertions of a member of the ladies' committee (Miss F. Henderson), has been more than paid off. Dr. J. St. Clair Boyd, one of the retiring surgeons, was re-elected.

Jan. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Victim to Professional Duty.

DR. DEVAY, medical officer in charge of the lunatic asylum which is maintained by the Brothers of Saint-Jean-de-Dieu at Lyons, was recently assassinated by one of the patients. On Jan. 23rd Dr. Devay was vaccinating the paying patients of the institution and while performing this operation a patient struck him a violent blow in the abdomen with some sharp instrument which he had concealed under his clothing. The wound was very severe and the bowel was perforated. Dr. Devay was at once removed to the Hôtel Dieu and Dr. Jaboulay performed a laparotomy, but in spite of all Dr. Devay succumbed to acute peritonitis. Dr. Devay occupied a prominent place among the ranks of specialists in mental diseases and for many years had contributed most valuable papers to the Archives of Neurology, more especially one in 1897 entitled "Melancholia and Exophthalmic Goitre." At the Congress of Alienists and Neurologists of Bordeaux held in 1896 he communicated another very notable paper upon Melancholia in Syphilitics. Besides these occupations he edited with great skill a monthly journal of medicine, the *Echo Medical de Lyon*, which is in its fourth year of publication. The tragic death of so distinguished a professional brother has naturally been the cause of much sorrow among the profession in Lyons.

The Budget of the Assistance Publique.

Dr. Napias, the director of the Assistance Publique at Paris, has just issued the annual report upon the general expenses of the organisation for the year 1899. The expenses, which increase year by year, amount to a total of 23,033 050 francs. This is equivalent to a sum of 8f. 93c. for each inhabitant. In 1891 the rate was 7f. 41c., and in 1876 5f. 49c. Dr. Napias attributes the increase to the creation of new departments and the perfecting of the old ones. In his statement Dr. Napias counts upon a great augmentation of income for the year 1900 owing to a large increase in the yield from the *droit des pauvres*. These dues enable a tax of 10 per cent. to be levied upon the gross receipts of all theatres and places of amusement. Taking into consideration the number of such places which will be open during the forthcoming exhibition Dr. Napias counts upon a revenue from this source of 1,500,000 francs in excess of the ordinary revenue. This estimate, which seems at first sight enormous, is not really so if the receipts in former exhibition years be taken into account. In 1878 the *droit des pauvres* realised 3,906,342 francs, whereas in the preceding year the figures were 2,728,(54. In 1889 the assets were 4,436,142 francs and in the preceding year 3,023,430, showing a difference of 1,414,712 francs. Even if there be allowed a sum of 30,000 francs for increased expenditure during this period, as Dr. Napias assumes, it will be seen that the increase which he hopes for is by no means unreasonable, although there will no doubt be increased expenses owing to the strain which will be thrown upon the hospitals.

Dissensions between Medical Men.

An unfortunate state of matters has arisen between the medical man in charge at the Blind Children's Institute and his second in command. As a rule, when there is a chief and a second in command the latter succeeds to the post of the former at his death or his resignation. But at the Blind Children's Institute there seems to be a tradition that the senior post should be farmed by members of the same family without any consideration for the rights of the assistant medical officer. In 1872 Dr. Lombard, the senior medical officer, resigned in favour of his son-in-law, Dr. Claisse. Dr. Brognard, the junior medical officer, being left out in the cold, resigned. In 1898 Dr. Claisse resigned, nominating as his successor his son, Dr. Paul Claisse, without regarding the claim of his junior, Dr. Watelet, although the latter was an elderly man and well known, while Dr. Paul Claisse is but 33 years of age. Dr. Watelet protested against this arrangement, and it was determined, with the concurrence of Dr. Paul Claisse, to submit the matter to the arbitrament of the medical men of the Seine. These gentlemen decided against Dr. Paul Claisse and in favour of Dr. Watelet. Dr. P. Claisse, however, in spite of this opinion stuck to his post. Dr. Watelet wrote him a letter marked "personal and private," in which he reproached him for his action in not abiding by the result of an arbitration accepted by him. Dr. Claisse thereupon sent this letter to the Minister of the Interior, M. Waldeck Rousseau, with an intimation that he took it as an act of insubordination on the part of the junior medical officer. M. Waldeck Rousseau has just intimated to Dr. Watelet, who is able to count 30 years' service, that he must apologise to Dr. Claisse or resign. This unfortunate incident, which is the subject of much comment in the public press, has made a great sensation in Paris.

Reform in the Provision for Medico-Legal Expert Evidence.

At a recent meeting of the Forensic Medical Society the introduction of an amendment to the new law concerning expert evidence was discussed on the motion of M. Jacomy. The society considered that the words "*expertise contradictoire*" should be expunged from the text of the regulations as defective and leading to misunderstanding. The chief part of the discussion was, however, taken up in considering the length of time allowed to the accused for making up his mind as to the choice of an expert witness. M. Jacomy considered that the period of three days allowed to the accused — which were in reality five days, viz., three days in which to make up his mind, one day to notify his choice to the judge, and one day for the notification of the expert chosen by the judge to the

accused—was much too long, for at an interval of five days after death expert evidence was not of any use. M. Jacomy considered that the examining magistrate should be empowered to nominate a provisional expert on behalf of the accused as soon as he should signify his choice after consultation with his solicitor. Professor Brouardel laid great stress upon the necessity for making expert examinations at as early a date as possible, for the earlier they were made the more valuable they were. Especially was this the case in the country where there was a lack of freezing apparatus, and in such circumstances bodies were almost always in a state of decomposition by the time they were submitted to the expert. It is almost impossible to make satisfactory expert examinations from June to October. Even in Paris 48 hours generally elapsed before any examination could be made, and if a second expert were necessary who could not begin his work before the lapse of five days expert evidence would be an impossibility. In the interests of justice the choice of a second expert should be made within 24 hours. After a very interesting debate the above conclusions were unanimously agreed to.

Jan. 29th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Sale of Secret Preparations.

A BILL relating to the sale of secret preparations is being introduced by the German Government. According to the *Pharmaceutische Zeitung* its principal provisions will be as follows. The central authorities of each State of the empire shall register the medicinal compounds which are to be regarded as of secret composition. Substances which are contained in the German Pharmacopœia or are generally recognised as remedies by medical science, or are intended only for disinfectants or cosmetics, however, may be sold without registration. The public advertisement of medicines of secret composition is prohibited. The bottles, boxes, &c., must bear only the name of the compound, the name of the maker, and the price. It is strictly prohibited to affix to the bottles or boxes labels containing recommendations, professional opinions, expressions of thanks by patients, or any other statement by which a special action of the compound is announced. Licensed druggists may sell secret preparations only on the written prescription of a medical man. The sale of secret preparations which are prejudicial to health is prohibited. The medical journals generally are in favour of the new Bill; they recommend, however, that the registration of secret preparations should be undertaken not by the individual States of the empire but by the Imperial Health Office for the whole territory of the empire so as to avoid the anomaly that a compound may be regarded as a secret preparation in one place whilst it may be sold without restriction in a neighbouring town belonging to another State.

Medical Journals in Germany.

The Berlin medical press has been increased by the issue of a new periodical entitled *Die Medicinische Woche* (*The Medical Week*), which is to appear every Monday. The editor is Dr. Paul Meissner of Berlin. The first number contains a leading article by the editor, an address by Professor von Bergmann on first-aid service, original articles by Professor Brieger and Dr. Friedjung, together with other matter consisting of reports of meetings of medical societies in Berlin and abroad, reviews of books, and other miscellaneous subjects. The number of medical journals has greatly increased of late years. Apart from the surgical, obstetrical, and other specialist weekly, fortnightly, or monthly periodicals, there are now many journals dealing with medicine and professional matters. Up to 1864 there was only one journal of this kind, the *Allgemeine Medicinische Central Zeitung*, which still continues to appear and is now in its sixty-eighth year. In 1864 the *Berliner Klinische Wochenschrift* was founded by Dr. L. Posner, the father of the present co-editor, Professor C. Posner. This was the first important medical journal in Berlin and was the only one till 1875, when the late Dr. Börner founded the *Deutsche Medicinische Wochenschrift*, which was afterwards edited by Dr. Gutmann; the present editors are Professor Eulenburg and Dr. Julius Schwalbe. The two last-mentioned periodicals are the leading medical journals of Berlin, and together with the *Münchener Medicinische Wochenschrift* are the leading medical journals of Germany, occupying a position in this country equivalent to that of THE LANCET and the *British Medical Journal* in England. A few months ago a similar journal called the *Deutsche Aerzte-Zeitung* appeared under the editorship of Professor Stadelmann; it is somewhat smaller and therefore cheaper than those above mentioned. Another paper containing fewer original articles but devoting much attention to reports and reviews of books, German and foreign literature, and medical societies is the *Deutsche Medicinal-Zeitung* conducted by Dr. Grosser. The contents of all these medical weekly papers are almost exclusively scientific, and, contrary to the customs of the British medical press, the space allotted to the social and economical interests of the profession is relatively small. On the other hand, there are a number of papers which are devoted exclusively to professional as distinguished from scientific matters. Most of them are distributed free of charge to the Berlin practitioners either because they derive their income from advertisements or because they are supported by professional societies. To the latter class belong the *Berliner Aerzte-Correspondenz*, the organ of the Berliner Standesvereine, edited by Dr. Joachim, the *Medicinische Reform*, the official organ of the Free-choice Society the *Deutsche Medicinische Presse*, and others. The *Aerztliches Vereinsblatt*, which is the official organ of the German Practitioners' Association, and the *Aerztlicher Central-Anzeiger*, which is specially devoted to the interests of country practitioners, are edited not in Berlin but in Hamburg.

Jan. 29th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

A Congress of International Hygiene.

THE invitation addressed to the European Governments by their Italian sister "to give an opinion as to the opportuneness and advisability of convening a Congress of International Hygiene similar to that held at Venice in 1897, to take measures for the defence of Europe against the pestis bubonica," seems, according to information derived from the Consulta (the Foreign Office), to have elicited replies favourable to such a project. From the same source I learn that the Italian Government has had quite sufficient encouragement from the Powers to employ itself in formulating a "questionario" or schedule of debateable points in view of the Congress becoming a *fait accompli*. Among these points the chief, I understand, are quarantine, and the rules to be enforced against the diffusion of plague or contagious maladies capable of assuming an epidemic form. Minor points for the consideration of the Congress are said to be "il commercio delle specialità medicinali, delle acque minerali, e degli altri articoli farmaceutici" (the trade in medicines of a special kind, in mineral waters, and in other articles sold by pharmaceutical chemists). On the completion and distribution of the "questionario" the Italian Government will next propose to the Powers the place at which the Congress shall meet and the time at which to hold it. This latter detail will, as THE LANCET[1] has abundantly shown, be the most difficult to settle. The tension between several of the great Powers is at present too severe to conduce to amicable discussion of such topics as "international sanitation." These, as late events have shown, may be highly debateable—even the organisation of the Red Cross having had to lay its account with the susceptibilities of Powers more or less closely identified with alliances "dual" or "triple." Postponement to a season when the political atmosphere is less charged with explosive element is, as THE LANCET suggested, the course least open to difficulty in convening the proposed Congress; and, indeed, it is significant that in their replies to the Italian invitation the sister Powers, while unanimous as to the "advisability" of holding some such meeting, appear to be, one and all, silent as to its "opportuneness."

Influenza.

Not only epidemic but pandemic, influenza is master of the situation. Nearly every public interest or occupation has to

[1] THE LANCET, Dec. 2nd, 1899, p. 1534.

pay tribute to it. Indeed, the more numerous the *personnel* employed the greater the number of its victims. True, the inmates of monasteries, or prisons, where a simple, austere life is the rule, are singularly free from it; but once let an infected individual find entrance into these communities and it passes from inmate to inmate till two-thirds or three-fourths of them are attacked. The two facts were noted by the Italian profession centuries ago. Lancisi, for example, the Pope's physician, remarked in 1709 when influenza prevailed in Rome that the prisoners of the Holy Inquisition were untouched by it. On the other hand, Mercuriali in 1580 observed that once an infected case found admission into a community or family the malady diffused itself rapidly. "Mirum est," he says, "ubi unus corripitur aliqui in domo, statim singulis ejus familiæ malum communicari" (It is remarkable when one person in any household is attacked that forthwith the disease is communicated to the other individuals composing it). The bacillus lurks in the mucosa of the air passages, so that the breath and still more the bronchial secretion and sputa of the patient are perhaps the most prolific source of its multiplication and spread. In Italy the churches, open all day and frequented by the very poor, who never use pocket-handkerchiefs, have their pavements converted into "influenza preserves"—the desiccated sputum parting with its bacilli every time a current of wind comes through the door, till the said bacilli load the air and impregnate the *bénitiers* or fonts of holy water with which the devout daub their faces. These are facts which the "Ufizi d'Igiene" of municipalities are now thoroughly alive to, with the result that, wherever practicable, expectoration on floor or pavement is prohibited, sometimes under penalties. Meanwhile the prevalence of the disease is, as the health officers throughout Italy are reporting, "assai inquietante" (very alarming). In Rome there are over 40,000 cases under treatment and possibly as many more among the very poor unknown to the profession. Coincident with the severe, prolonged winter, the virulence of the malady is at its worst in Northern Italy—in Turin, for instance, the "tavole necrologiche" registering 73 deaths in the 24 hours. This mortality is even higher than that of the epidemics of 1889–90 and 1891–92 when influenza, with its peculiarly "neurotic note," decimated the Subalpine capital. At the Vatican the vigilance of the Pope's body physician is, if possible, redoubled, and the utmost care is practised so as never to let the temperature of the apartments frequented by His Holiness fall below 65° F. Of the three patients mentioned in THE LANCET of Jan. 20th (p. 205) Cardinal Trombetta is dead; Prince Altieri, commandant of the pontifical guard, is also dead; and the Cardinal Vicar (Jacobini) has received the last consolations of the Church and is *in extremis*. On the other hand the Minister of Public Instruction (Dr. Baccelli) is now convalescent and is shortly expected at Genoa on business connected with his portfolio.

Jan. 30th.

RUSSIA.

(FROM A CORRESPONDENT.)

Another Outbreak of Plague in Southern Russia.

NEWS has just been published of the occurrence, in the second half of November, of yet another outbreak of plague in Russia. The facts now made public are scanty, but though the assertion is not definitely made that the disease in question was in truth plague it is scarcely possible to doubt that it was so. The symptoms appear to have resembled in every respect those of the outbreak at Kolobovka on the Volga last summer, and, moreover, the disease proved fatal to every person attacked by it. The scene of the late outbreak was two Kirghiz *aouls*, or encampments, in the maritime division of the Krasnoyarsk *uyezd*, or district, in the Government of Astrakhan. As the town of Krasnoyarsk, which gives its name to the district, is situated on one of the mouths of the Volga river quite close to the village of Kolobovka it would appear that the scene of the late outbreak was at no great distance from that of last summer's epidemic. The *aouls* in question are situated on an island, and as exceedingly stormy weather prevailed at the time of the outbreak the inhabitants were unable to communicate with the shore. It was only at the end of November (according to the Old Style which is 12 days posterior to the western mode of reckoning), when the waters froze, that communication with the shore was re-established and the authorities came to hear of the epidemic. The names of the *aouls* were Kishkiné-Aral and Kine-Aral. The symptoms of the disease were described as consisting of fever, headache, pain over the heart, and expectoration of blood. As soon as the Governor of Astrakhan learnt of the outbreak he telegraphed the news to the Imperial Plague Commission, and at the request of the Commission he at once personally visited the island. The most radical measures of disinfection and destruction of infective material were put in force. Not only infected articles which had belonged to those who died from the disease, but the tents themselves, were burnt. The sick were isolated and the other inhabitants were first given a bath, then provided with new clothes, and put into clean tents at a distance from the old ones and kept under supervision by medical men. By Dec. 5th (17th) the outbreak was at an end; but not until 59 persons had succumbed to the disease. As already stated not a single patient recovered, and the case-mortality was consequently cent. per cent. The epidemic was therefore a considerably more extensive one, and even more fatal, than that at Kolobovka, where 24 persons were attacked and one did recover. From the brief summary of the symptoms and from the extremely high mortality it can scarcely be doubted that the later outbreak, as the earlier one, was one of the pneumonic form of plague. Some further light upon its character will probably be thrown by the inquiries of Professor Levin, Professor Raptchevski and Professor Vinogradof, who have been sent by the Imperial Plague Commission to investigate the outbreak. Their report will be looked forward to with interest.

Recent Prevalence of Diphtheria in Russia.

Diphtheria has for some years past been one of the most widespread and fatal of all zymotic diseases in Russia. Dr. Raukhfus, a leading authority upon all diseases of childhood, read a valuable paper upon the subject before a medical society in St. Petersburg in March of last year. That paper has just been published in full in *Botkin's Hospital Gazette*. As an epidemiological and therapeutical study of the recent prevalence of this disease Dr. Raukhfus's essay is a model, and it is regrettable that it is not possible here to do more than summarise the conclusions at which he arrives. Those conclusions are briefly as follows: 1. The present epidemic of diphtheria in St. Petersburg dates since the year 1894, and is part of a pandemic of the disease which has affected a great portion of the Russian Empire. 2. The preceding epidemic of diphtheria in St. Petersburg was in the years 1881 to 1884 inclusive. It affected probably fewer persons than the present epidemic, but, on the other hand, the case-mortality was then nearly twice as high as it is now. The change from high to low case-mortality did not occur at the beginning of the present epidemic, but came on suddenly and exactly at the time of the introduction of the serum treatment—that is to say, in the second year of the epidemic. 3. The case-mortality from diphtheria in the Prince Peter of Oldenburg's Children's Hospital—the principal hospital of the kind in St. Petersburg—was during the 25 years 1870–1894 on an average 54 per cent. The maximum had been 60·6 and the minimum 46·2 per cent. From 1870–1880, a period when the disease was not epidemic, the average mortality was 52 per cent.; in 1881–1884, an epidemic period, it was 59 per cent.; and in 1885–1894, a non-epidemic period, it was 55·8 per cent. The case-mortality was, therefore, not very materially affected by the degree of prevalence of the disease. In 1894 the case-mortality was as high as ever. But in 1895, when the serum treatment began to be widely practised, there was a sudden fall in the mortality to 23·9 per cent., and since that year it has varied between 21·4 and 25·5 per cent. 4. The character of the recent epidemic has not been the same throughout. In the last two years (1897–1898) the number of cases of phlegmonous (septic) diphtheria has largely increased, and the number of cases of diphtheritic croup has correspondingly diminished, in comparison with the numbers of each class in the first two years (1895–1896), and at the same time the phlegmonous cases have become more malignant in character. 5. The same reduction in case-mortality since the introduction of the serum treatment has also been observed in the other children's hospitals in St. Petersburg. The remaining conclusions deal in detail with the different types of the disease and the effect of the serum treatment upon them. It was found that the treatment had reduced

the mortality in cases of diphtheritic croup to a greater extent than in cases of phlegmonous or septic diphtheria. Excluding those cases which died within 24 hours of admission to hospital the mortality in patients treated with the serum was only 19·6 per cent., while in those not so treated it was 39·6 per cent., or almost exactly double. Finally, Dr. Raukhfus concludes that in the anti-diphtheritic serum we possess the most powerful remedy for the disease which has hitherto been discovered.

New Style and Old Style.

No little confusion arises at times from the retention in Eastern Europe of the Julian calendar and the constant necessity of indicating whenever a date is mentioned whether that date is according to the New Style or according to the Old Style. A commission is already sitting in Russia to consider the advisability of doing away with this discrepancy, and it may be hoped that it will be found practicable to introduce the New Style, and so (should Greece follow suit) make the dates the same all over Europe. The difference between the two styles is now 12 days, but in another month it will be 13 days, as this year is not a leap year according to the Gregorian calendar, while it is one according to the Julian calendar. Up to two centuries ago the date of the year was reckoned in Russia as from the creation of the world. The year 1699 was called the year "7208 from the creation of the world" (*otj sotvorénia mira*) and it was only in that year that the western mode of reckoning from the birth of Christ was introduced. The change was made by Peter the Great in an ukase dated Dec. 19th, 1699, and at the same time the beginning of the year was altered from September 1st to Jan. 1st. The new mode of reckoning was not, however, made compulsory, and it was permitted to use either the date, *Anno Domini*, or the date "from the creation of the world," or both together. On the day following the issue of this ukase another was published announcing the commencement of a new century on Jan. 1st, 1700. Moscow was *en fête* for a whole week, guns were fired, and the city was illuminated in honour of the event. This imperial method of settling a highly controversial question—of which a recent and exactly parallel instance will be fresh in everyone's mind—has not a little to commend it.

Obituary.

SIR WILLIAM MILLER, M.B. T.C.D., J.P.

THE death is announced of Sir William Miller—one of the most respected and able practitioners in Ulster—after a short illness at his suburban residence, Braehead, Londonderry, on Jan. 28th, at the advanced age of 73 years. He had been attending to his usual duties until he was attacked by influenza. Sir W. Miller was the second son of the late Joseph Ewing Miller, M.D., J.P., a medical man who several times during his long life of 92 years had held the office of Mayor of Derry. Born in Derry, young Miller studied in Trinity College, Dublin, where he graduated M.B. in 1853, becoming a Licentiate of the Royal College of Surgeons in Ireland in the same year. Returning to his native city Dr. Miller began practice and followed his father's footsteps in taking an active part in public life there. For 40 years he held a prominent professional and social position in Derry. He was a magistrate of the city and of the county of Derry and a grand juror of the county. In the year 1875 he was chosen mayor of the city of Derry, and on that occasion he entertained the Lord-Lieutenant of Ireland (the Duke of Abercorn) and the members of the Royal Agricultural Society who visited the city during his year of office. He was re-elected mayor the following year, and was then knighted, and was again chosen chief magistrate for the third year in succession. He also was elected mayor in 1888 and in 1889. He gave a great portion of his time to the administration of public affairs of the city and county of Derry and he had just been appointed high sheriff of the county for the present year. Professionally he had a large private and consulting practice. He held all the best medical appointments, being surgeon to the County Derry Infirmary, medical officer to the County Derry Gaol and Londonderry Post Office, physician to the County of Derry Fever Hospital, and Surgeon-Major of the Londonderry Artillery Militia. He was also a member of the Londonderry Bridge Board. It is given to few men in any profession to attain such a distinguished public position in his native city as fell to the lot of Sir W. Miller. He was a level-headed Ulsterman of great prudence, caution, and sagacity, and it was these qualities of head as well as his kindly disposition which gave him such a commanding civic and professional position. He has left a widow and a large family. Two of his sons occupy prominent positions in Derry, one of them (Dr. Joseph Miller) being in the medical and the other in the legal profession.

ALEXANDER CHARLES ARCHIBALD ALEXANDER OF BOYDSTONE, B.A. CANTAB., M.R.C.S. ENG., L.S.A., MAJOR, R.A.M.C.

THE death of Major A. C. A. Alexander, R.A.M.C., of the Coldstream Guards, who was recently permanent medical officer to the Royal Military Tournament, which occurred on Jan. 23rd, has occasioned great regret to a wide circle of friends. Major Alexander was educated at Cheltenham and Trinity College, Cambridge. On obtaining his degree in Arts he entered the medical school of St. George's Hospital. After qualifying as M.R.C.S. Eng. he obtained a commission in the 3rd Battalion of the Royal Scots Fusiliers. He served later in the 1st Battalion Coldstream Guards, which regiment he accompanied in the Suakim Expedition in 1885, and was present at the engagements at Hasheen, at that near Tofrek, and at the destruction of Tamai, for which services he obtained the medal with clasp and the Khedive's star. Last year he returned from Gibraltar on sick leave, having had a slight sunstroke, from which unfortunately he did not entirely recover, so that to his great grief he was unable to accompany his regiment on the present South African campaign.

Major Alexander succeeded to the estate of Boydstone on the death of his father some twelve years ago. He was a justice of the peace for the counties of Ayr and Lanark, in each of which he owned property. He was a man of splendid physique and in the prime of life, and his many friends in the service, in the medical profession, and in society generally will find it hard to credit that death has seized upon so vigorous a man, who seemed to have before him a long and useful life.

THOMAS JONES DYKE, J.P., F.R.C.S. ENG., L.S.A.

WE have to record the death on Jan. 20th, at the advanced age of 84 years, of Mr. Thomas Jones Dyke who had held the position of medical officer of health of the town of Merthyr for over 36 years. He was articled at the age of 15 years to Mr. David Davies, who was then surgeon to the Cyfarthfa Iron and Coal Works, Merthyr, and at the end of three years he entered as a student at Granger's School in the Borough. He took his L.S.A. in 1837 and his M.R.C.S. in the year following. In 1866 he was elected a Fellow of the College. The Public Health Act, 1848, gave permissive authority to local boards of health to appoint a fit and proper person to act as officer of health to the district, but it was not until 1872 that such an appointment was made obligatory upon sanitary authorities. From the days of the Health of Towns Commission Mr. Thomas Jones Dyke became an enthusiastic sanitarian and by means of public lectures he succeeded in bringing home to his fellow-townsmen in Merthyr such a sense of their responsibilities in public health matters that in the year 1849 it was decided to form a local board of health. Throughout the cholera epidemics of 1849 and 1854 Mr. Dyke acted as medical officer to the board of guardians. In the former year there were nearly 1700 fatal cases, and he himself was attacked by the malady. In 1863—nine years before the appointment was made compulsory—he was elected medical officer of health to the local board at the modest salary of 20 guineas per annum, and in 1873 he was appointed to a similar office by the Merthyr Rural Sanitary Authority, continuing an official under both bodies, under their altered titles, until the day of his death. During the last six years he had retired altogether from general practice and devoted himself entirely to his public health duties.

Mr. Dyke was a Fellow of the Incorporated Society of

Medical Officers of Health and of the Sanitary Institute and a Member of the Société Française d'Hygiène. He was a Justice of the Peace for the county of Glamorgan and in 1876 and 1877 held the office of high constable of Merthyr. He was the oldest Freemason in Wales, having been initiated in the Loyal Cambrian Lodge, No. 110, in the year 1839, acting as secretary of the lodge for 20 years. In the Provincial Grand Lodge of South Wales and Monmouthshire he had filled the office of grand senior warden.

FREDERICK EDWARD PEARSE, M.D. ST. AND., M.R.C.P. EDIN., M.R.C.S. ENG.

AT the meeting of the Frome Board of Guardians held on Jan. 23rd a vote of condolence was passed with the family of the late Dr. Frederick Edward Pearse who had been medical officer and public vaccinator for the first district of the Frome Union for the past 18 years and had previously held the appointment of medical officer of health of Wellington.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. L. G. Courvoisier, Extraordinary Professor of Surgery, and Dr. K. Mellinger, Extraordinary Professor of Ophthalmology, have been promoted to Ordinary Professorships.—*Berlin:* Dr. Gustav Fritsch, Extraordinary Professor of Histology and Comparative Anatomy, has been promoted to an Honorary Professorship.—*Bonn:* Dr. Julius Strasburger has been recognised as *privat-docent* of Internal Medicine.—*Breslau:* Dr. Groenouw, *privat-docent* of Ophthalmology, has been granted the title of Professor.—*Budapest:* Dr. Michael von Lenhossék of Tubingen has been appointed to the chair of Anatomy in succession to the late Professor Mihálovics. Dr. Wilhelm Friedrich has been recognised as *privat-docent* of Professional Diseases.—*Catania:* Dr. Gaetano Traversa of Naples has been recognised as *privat-docent* of Experimental Pharmacology and Therapeutics.—*Clausenburg:* Dr. Rigler has been appointed Extraordinary Professor of Hygiene.—*Copenhagen:* Dr. Rovsing has been appointed to the chair of Surgery.—*Florence:* Dr. Salaghi of Naples has been recognised as *privat-docent* of Orthopædic Surgery.—*Freiburg (Baden):* Dr. Otto Manz has been recognised as *privat-docent* of Surgery.—*Geneva:* Dr. L. Bard of Lyons has been appointed Professor of Clinical Medicine.—*Gratz:* Dr. J. Haberman, Extraordinary Professor of Otology, has been appointed Professor.—*Jurieff (Dorpat):* Dr. Muratoff has been promoted to the Professorship of Midwifery and Gynæcology.—*Kazan:* Dr. Arnoldoff has been recognised as *privat-docent* of Hygiene.—*Lemberg:* Dr. Oskar von Widmann, *privat-docent* of Medical Pathology, has been granted the title of Professor.—*Moscow:* Dr. Poliakoff has been recognised as *privat-docent* of Respiratory Diseases.—*Munich:* Dr. Karl Schloesser, *privat-docent* of Ophthalmology has been promoted to an Extraordinary Professorship. Dr. Ludwig Neumayer has been recognised as *privat-docent* of Anatomy.—*Naples:* Dr. Ferdinando Matoni has been recognised as *privat-docent* of Medical Pathology, Dr. Cesare Colucci as *privat-docent* of Neurology, Dr. Gaetano Angiolella as *privat-docent* of Psychiatry, Dr. A. Sandulli as *privat-docent* of Operative Medicine, Dr. Andrea Zinno as *privat-docent* of General Pathology, Dr. Antonio Virdia as *privat-docent* of Surgical Pathology and Operative Medicine, Dr. Enrico Rossi as *privat-docent* of Surgical Pathology, and Dr. Giovanni Piccoli as *privat-docent* of Midwifery and Gynæcology.—*New York (Post-Graduate School):* Dr. Max Einhorn has been appointed Professor of Medicine and Dr. R. T. Morris and Dr S. Lloyd Professors of Surgery.—*Prague (Bohemian University):* Dr. Anton Heveroch has been recognised as *privat-docent* of Neurology and Psychiatry.—*St. Petersburg (Military Medical Academy):* Dr. G. Rein of Kieff has been appointed to the chair of Midwifery and Gynæcology vacant by the death of Dr. Slavianski. Dr. L. Popelski has been recognised as *privat-docent* of Physiology, Dr. Dmitri Kuralieff as *privat-docent* of Medical Chemistry, and Dr. Constantin Georgievski as *privat-docent* of Internal Medicine.—*Turin:* Dr. J. Arslan and Dr. Giuseppe Strazza have been recognised as *privat-docenten* of Laryngology and Otology.—*Vienna:* Dr. Moritz Sachs has been recognised as *privat-docent* of Ophthalmology.—*Zürich:* Professor Billeter has been appointed Director of the newly-established Dental School.

WALTON CONVALESCENT HOME, NEAR CLEVEDON.—The annual report shows that 431 patients (158 males and 273 females) were admitted during 1899.

UNIVERSITY COLLEGE OF NORTH WALES.—At a meeting of the Court of Governors of the University College of North Wales held at Bangor on Jan. 22nd it was decided to construct new college buildings in Bangor.

CLEVEDON CONVALESCENT HOME.—The annual report for 1899 states that 396 patients were admitted during the year (175 men and 221 women). The authorities of the home have offered 24 beds for the reception of wounded soldiers and this has been accepted.

VACCINATION RETURNS.—At a meeting of the Calne (Wilts) Board of Guardians held on Jan. 23rd it was reported that during the year ended Dec. 31st the births of 171 children were registered, of whom 36 were vaccinated, nine were exempted, 15 died, and 111 remained unvaccinated.

HOSPITAL SATURDAY FUND.—AT a special meeting of the board of delegates of this fund held at the offices, Gray's Inn-road, on Saturday, Jan. 27th, on the recommendation of the distribution committee a sum of £17,013 was awarded to the 174 participating institutions and £2938 to 27 miscellaneous institutions, including ambulance, distribution, and surgical appliance committees and institutions for the gratuitous nursing of the sick poor in their own homes. The total receipts for 1899 were £20,023, an increase of £684 upon the previous year, but the awards were less.

PRESENTATIONS TO MEDICAL MEN.—Mr. James Carlisle, L.F.P.S. Glasg., of Crossgar, co. Down, and his wife have been the recipients from friends, on their leaving Crossgar, of an address and a drawing-room clock and ornaments as tokens of esteem and regard.—On retiring from the post of acting medical superintendent at the Grove Hospital of the Metropolitan Asylums Board Mr. F. Foord Caiger, M.D. Lond., has been presented by the medical staff, the matron, nursing staff, and employées in the domestic service with a silver cigarette case, a chased silver cake basket, and a silver sugar caster as marks of regard and friendship.—At a well-attended meeting at the Coöperative Hall, Netherfield, on Jan. 25th, Mr. John Sutherland, M.B., C.M. Edin., B.Sc., after six years' residence in that village, was presented with a silver tea and coffee service on the occasion of his recent marriage. The Vicar, in making the presentation on behalf of the subscribers, concluded his remarks by wishing that Dr. Sutherland might have happiness and prosperity and that it would be many years ere he ceased to administer to their ailments.

UNIVERSITY OF CAMBRIDGE.—An Allen Scholarship of the value of £250 for one year will be awarded this term for research in medicine, mathematics, physics and chemistry, biology and geology, or moral science. Candidates must be graduates under 28 years of age at the beginning of this year and must undertake to devote themselves to research in the subject of their choice in Cambridge or elsewhere. Applications are to be sent to the Vice-Chancellor on or before Feb. 20th.—The Faculty of Medicine of University College, Cardiff, has been recognised by the university for the purposes of medical study.—The Botanical School buildings have presented plans and estimates for the new laboratories to be erected on the ground recently purchased from Downing College. The buildings will cost about £22,500 and will meet the present and prospective requirements of the department, which has long suffered from overcrowding. The source of the necessary funds is less apparent, though doubtless the recent benefactions to the University will be drawn upon to some extent.—Lord Lister has been appointed an elector to the professorship of Pathology in the place of the late Sir James Paget.—Dr. Henry Jackson has been elected without opposition to the place on the council of the Senate vacated by Mr. Dale, now principal of University College, Liverpool.—By a very large majority the Governors of Addenbrooke's Hospital have adopted a scheme whereby the University Medical School shall be brought into closer relations with the hospital. In consideration of an annual subsidy of £300 the governors will elect the Regius Professor of Physic and the

Professor of Surgery to the staff of the hospital, and will provide all needful facilities for clinical instruction and examinations.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Opening of the Session.

THE Seventh Session of the present Parliament was opened on Tuesday, Jan. 30th, when a message from Her Majesty the Queen was read in the House of Lords by the Lord Chancellor, acting as one of Her Majesty's commissioners. In this message Her Majesty spoke of the heroism shown by her soldiers and sailors in South Africa, and expressed her regret that so many valuable lives should have been sacrificed, and said, "I am confident that I shall not look to them in vain when I exhort them to sustain and renew their exertions until they have brought this struggle for the maintenance of the empire and the assertion of its supremacy in South Africa to a victorious conclusion." With regard to India Her Majesty said, "I regret that owing to insufficient rainfall in the autumn over a great part of Western and Central India, the harvests and pasturage have failed to such an extent as to create a famine. Timely measures have been taken by my Government and by the rulers of the Native States affected to relieve suffering and to prevent starvation. I regret to add that the epidemic of plague continues and that although its severity has not increased since last year there is at present no prospect of its diminution." The references in the message to intended legislation were not numerous nor were they of very great importance. Mention was made of Bills to amend the law of lunacy, factory legislation, the Housing of the Working Classes Act and the Companies Acts, and to lessen the number of accidents among railway servants. The Bill for the Amendment of the Companies' Acts will, in all probability, contain a provision with reference to companies carrying on medical practice. There was no mention in the message of any Bill to amend the Medical Acts, but it does not follow that such a measure will not be introduced by the Government in the course of the session.

The London Water Question.

The final report of the Royal Commission appointed to inquire into the subject of the water-supply within the limits of the metropolitan water companies has been laid on the table of Parliament.

Special Rules for Chemical Works and Match Factories.

The Secretary of State has prepared two new sets of special rules—one in regard to the employment of persons in chemical works in which is carried on the manufacture of bichromate or chromate of potassium or sodium, and the other in regard to the employment of persons in lucifer match factories in which white or yellow phosphorus is used.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.

Maladies des Pays Chauds et Tropicaux. Par Dr. J. Brault. 1900.
Anatomie Clinique des Centres Nerveux. Par Dr. Grasset. 1900.

BAILLIÈRE, TINDALL, AND COX, London.

The Pathological Statistics of Insanity. By F. O. Simpson, L.R.C.P. Lond., M.R.C.S. 1900. Price 10*s.* 6*d.* net.

BAUERMEISTER, F., Glasgow.

Das Trainieren zum Sport. Von Henry Hoole. 1899. Price 2*s.* 3*d.*
Vorfragen der Biologie. Von Dr. E. Albrecht. 1899. Price 2*s.* 6*d.*
Die Missbildungen des Gaumens, und ihre Zusammenhang mit Nase, Auge, und Ohr. Von Dr. F. Danziger. 1900. Price 3*s.* 6*d.*
Lerne gesundheitsgemäss sprechen. Professor C. R. Hennig. 1899. Price 1*s.* 3*d.*
Die Hygiene der Stimme. Von Dr. C. Korner. 1899.
Verhandlungen des Congresses für Innere Medicin. Von Dr. E. von Leyden und Dr. E. Pfeiffer. 1899. Price 12*s.*

BLACK, A. and C., Soho-square, London.

The Grammar of Science. By Karl Pearson, M.A., F.R.S. Second edition. 1900. Price 7*s.* 6*d.*

BROWNE, T. B., Queen Victoria-street, London.

T. B. Browne's 1900 Directory: The Advertiser's A.B.C. Price 10*s.* 6*d.*

CASSELL AND Co., London.

A Manual of Chemistry, Inorganic and Organic. By A. P. Luff, M.D., B.Sc. Lond., F.R.C.P., and F. J. M. Page, B.Sc. Lond., F.I.C. Illustrated. 1900. Price 7*s.* 6*d.*

DORNAN, W. J., Philadelphia.

Transactions of the American Surgical Association. Vol. xvii. Edited by De Forest Willard, A.M., M.D., Ph.D. 1899.

FISCHER, G., Jena.

Die Technik der Speziellen Therapie. Von Dr. F. Gumprecht. Zweite Auflage. 1900.

HOLDER, A., Wien.

Specielle Pathologie und Therapie. Von Dr. H. Nothnagel. Die Pest. Von Weil, Docent, Dr. H. F. Müller, und Dr. R. Pöch, in Wien. Mit 4 Tafeln. 1900.

LIVINGSTONE, E. AND S., Edinburgh.

The Student's Handbook of the Practice of Medicine. By H. A. Husband, M.B., C.M., B.Sc., F.R.C.S.E., M.R.C.S. Fifth edition. Illustrated. 1900. Price 10*s.* 6*d.* net.

LONGMANS, GREEN, AND Co., Paternoster-row, London.

A Manual of Surgical Treatment. By W. W. Cheyne, M.B., F.R.C.S., F.R.S., and F. F. Burghard, M.D., M.S. Lond., F.R.C.S. In six parts. Part I. Second Edition. 1899. Price 10*s.* 6*d.*
A Manual of Pathology. By Jos. Coats, M.D. Fourth edition, revised by L. R. Sutherland, M.B. Illustrated. 1900. Price 31*s.* 6*d.*
Training of the Young in Laws of Sex. By Rev. the Hon. E. Lyttelton. 1900. Price 2*s.* 6*d.* net.

MACMILLAN AND Co., London.

Text-book of Palæontology. By K. A. von Zettel. Translated and edited by Chas. R. Eastman. Vol. I. Illustrated. 1900. Price 25*s.* net.

MASSON ET CIE., Paris.

Notions de Laryngoscopie utiles au Médecin. Par Dr. F. J. Collet.

METHUEN AND Co., Essex-street, Strand, London.

A Handbook of Nursing. By M. N. Oxford. 1900. Price 3*s.* 6*d.*

NEWNES, GEORGE, Southampton-street, Strand, London.

The Story of Life's Mechanism. By H. W. Conn. Illustrated. 1899. Price 1*s.*

PUBLISHED AT THE CONNAUGHT MANSIONS, Victoria-street, London.

The Medical Review (Medical and Surgical Review of Reviews). Edited by N. E. Boyd, M.D. Vol. ii., January-December, 1899.

PUBLISHED BY THE AMERICAN ORTHOPEDIC ASSOCIATION, Philadelphia.

Transactions of the American Orthopedic Association. Thirteenth session: June, 1899. Vol. xii. 1899.

REDMAN COMPANY, London.

The Gross and Minute Anatomy of the Central Nervous System. By H. C. Gardinier, A.M., M.D. Illustrated. 1900. 25*s.* net.
A Text-book of Physiology. By W. S. Hall, Ph.D., M.D. Illustrated. 1900. Price 20*s.* net.
The Pasteurisation and Sterilisation of Milk. By A. E. Bell, F.I.C., F.C.S. 1899. Price 1*s.* 6*d.* net.

SEITZ AND SCHAUER, München.

Taschenbuch für Dermatologen und Urologen. Von Dr. A. F. von Notthafft. 1900. Price 2*s.*

SOCIÉTÉ D'EDITIONS SCIENTIFIQUES, Paris.

Précis d'Urologie Clinique. Par L. Lematte. Première partie.

UNWIN, T. F., Paternoster-buildings, London, and BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.

Experiments on Animals. By S. Paget. With an Introduction by Lord Lister. 1900. Price 6*s.*

WOOD, WILLIAM, AND COMPANY, New York.

The Treatment of Diseases of the Nervous System. By Jos. Collins, M.D. Illustrated. 1900.

Laboratory Note-Book for Chemical Students. By N. B. Lewes and J. S. S. Braine. (A. Constable and Co., Whitehall-gardens, Westminster); price 4*s.*—Magazines, &c., for February: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, The Captain, The King.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

AUBREY, THOMAS, M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon to the Bristol General Hospital.

BUNCLE, T. M., M.B., Ch.M. Edin., has been appointed Medical Officer for the Second Sanitary District of the Morpeth Union, vice F. W. Skrimshire, deceased.

CRAIG, PETER L. L., civil surgeon, M.A., M.B., C.M. Glasg., has been appointed to fill a temporary vacancy in the Western District.

DAVIES, A. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer at Beaudesert, Queensland.

DUKE, EDGAR, M.D. Durh., M.R.C.S., has been appointed Honorary Physician to the Police Convalescent Home, Hove, vice F. J. Waring, deceased.

FLOYD, E. W., M.B., Ch.B. Vict., has been appointed Resident Medical Officer to the Guest Hospital, Dudley.

GETHING, W. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed, *pro tem*, Medical Officer at Port Adelaide, Australia.

GOLDIE, W. H., M.D., C.M., has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, London, S.W.

GORRICK, H. P. C., M.D. New York, has been appointed Government Medical Officer and Vaccinator at Cassilis, New South Wales.

GREGG, J. L., M.B., B.S. N. Zeal., has been appointed Officer of Health for the Shire of Mansfield, Victoria, Australia, vice P. H. Liddle, resigned.

HAWTHORNE, C. O., M.D. Glasg., M.R.C.P. Lond., has been appointed Examiner in Materia Medica and Therapeutics in the University of Edinburgh.

HEALY, J. J. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Officer of Health for the Shire of Phillip Island and Woolamai, Victoria, Australia.

JONES, P. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Coleford Sanitary District of the Frome Union, vice T. C. Lawson, resigned.

LOW, C., M.B., Ch.M. Edin., has been appointed a Public Vaccinator for the District of Opunake, New Zealand.

MESSITER, A. F., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Belton Sanitary District of the Throne Union.

MILLS, H. H., M.B. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, London, S.W.

MORLEY, G. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Portsmouth Sanitary District of the Portsea Island Union, vice F. Morley, deceased.

MULLEN, W. L., M.D., Ch.B. Melb., has been appointed Acting Medical Superintendent of the Metropolitan Lunatic Asylum, Victoria, Australia.

PALMER, C. S., L.R.C.P. Lond., M.R.C.S. has been appointed Medical Officer for the First Sanitary District and the Workhouse of the Reigate Union, vice A. Kelsey, resigned.

RIDSDALE, A. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the First Sanitary District of the Newhaven Union, vice F. Dalton, resigned.

ROBSON, F. W. H., M.B., C.M. Edin., has been appointed Medical Officer for the Burscough Sanitary District of the Ormskirk Union, vice A. J. Partridge, resigned.

SCOTT, J. M., M.B. Melb., has been appointed Acting Medical Superintendent of the Lunatic Asylum, Beechworth, Victoria, Australia.

STEDMAN, S. B., L.S.A., has been appointed Medical Officer for the Swinhope Sanitary District of the Caistor Union, vice J. B. O. Richards, resigned.

SHORLAND, ERNEST TREVOR, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Wiltshire, Gloucestershire, and South Wales Regiment of the Imperial Yeomanry.

WELD, J. C., L.K.Q.C.P. Irel., has been appointed Officer of Health for the borough of Carisbrook, Victoria, Australia, vice C. B. Duigan, deceased.

WIGGINS, H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second (B) Worthing Sanitary District of the East Preston Union, vice B. H. Lees, resigned.

WRAY, C. J. H., L.R.C.P. Edin., has been appointed Visiting Surgeon to the Reformatory School for Boys, Diamantina, Queensland.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ALDERSHOT URBAN DISTRICT COUNCIL.—Medical Officer of Health. Annual election. The inclusive salary will be £300 per annum payable quarterly.

BATH GENERAL OR ROYAL MINERAL WATER HOSPITAL, Bath.—Resident Medical Officer, unmarried. Salary £100 per annum, with board and apartments.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon for twelve months. Salary £80 per annum, with apartments, board, and attendance.

BOROUGH OF SOUTHPORT.—Medical Officer of Health for the Borough. Salary £500 per annum. Apply to the Town Clerk, Town Hall, Southport.

BRECON INFIRMARY, South Wales.—Resident House Surgeon, unmarried. Salary £90 per annum, with furnished apartments, board, all found except beer, attendance, fire, and gas.

BRIXTON DISPENSARY, Water-lane, Brixton, S.W.—Resident Medical Officer for two years, unmarried. Salary £150, with furnished apartments, attendance, coals, and gas.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant House Surgeon. Salary £50 per annum, with board and residence.

CARDIFF INFIRMARY.—Assistant House Surgeon and Assistant House Physician, each for six months. Salaries at the rate of £50 per annum, with board, washing, and apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at the rate of £50 per annum, with board and residence in the hospital.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant. Tenable for three months on payment of eight guineas.

CITY OF LIVERPOOL.—Assistant to the Medical Officer of Health. Salary £350 per annum, subject to certain conditions. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London.—Surgeon to Out-patients.

EYE AND EAR HOSPITAL, Tunbridge Wells.—House Surgeon for one year. Salary £60, with board and residence.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, London.—Resident Medical Officer. Must speak French. Salary £80 per annum, with board.

GENERAL INFIRMARY AT GLOUCKSTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—House Surgeoncy. Salary £100 per annum, with board, residence, and washing.

GRAVESEND HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

HANTS COUNTY ASYLUM, Fareham.—Third Assistant Medical Officer, unmarried. Salary £125 per annum, increasing to £150 after twelve months' service, with furnished apartments, board, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Assistant Physician.

INFIRMARY OF THE WANDSWORTH AND CLAPHAM UNION, St. John's-hill, Clapham-junction, S.W.—Third Assistant Medical Officer for twelve months. Salary £70, with board, lodging, and washing.

LEEDS GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £50 a year, with board and lodging.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MASON UNIVERSITY COLLEGE, Birmingham.—Lecturer on Osteology and Chief Demonstrator of Anatomy.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Physician and Pathologist, Surgeon for Diseases of Women, and an Assistant Surgeon.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road.—Junior Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, attendance, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, Salary £140 per annum, all found except board, unmarried..

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for twelve months. Salary £50, with board, lodging, and washing in the hospital.

POPLAR HOSPITAL FOR ACCIDENTS, London.—Senior House Surgeon for twelve months. Salary £120 per annum, with board and residence.

RADCLIFFE INFIRMARY, Oxford.—Honorary Assistant Physician.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Surgeon, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

ROYAL INFIRMARY, Sheffield.—House Surgeon for three years. Salary £120 per annum, with board, lodging, and washing.

ROYAL SEA BATHING HOSPITAL, Margate.—Resident Surgeon. Salary £100, with board and residence. Apply to the Secretary, Royal Sea Bathing Hospital Offices, 30, Charing-cross, London.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with rooms, board, and washing.

SEAMEN'S HOSPITAL SOCIETY (*Dreadnought*), Greenwich.—Senior House Surgeon. Salary £75 per annum, with board and residence, and an additional £25 per annum conditionally. Also House Surgeon. Salary £50 per annum, with board and residence. These vacancies are for Officers at the Branch Hospital in the Royal Victoria and Albert Docks.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £2 per mensem, with residence, board, and washing.

SUSSEX COUNTY HOSPITAL, Brighton.—Fourth Resident Medical Officer, unmarried. Salary £30 per annum, with board, washing, and residence in the hospital.

VENTNOR ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, with board and residence.

WORKSOP DISPENSARY HOSPITAL.—Resident Surgeon, unmarried. Salary £120 per annum, paid monthly, with increase when hospital is opened. Rooms, coal, gas, furniture, and housekeeper provided. Apply to Mr. Charles A. Whall, Worksop.

Births, Marriages, and Deaths.

BIRTHS.

CARTER.—On Jan. 24th, at Elm House, Chapel Allerton, Leeds, the wife of Eustace G. Carter, M.R.C.S., of a daughter.

GILPIN.—On Jan. 25th, at Bridge House, Evesham, the wife of R. Harrison Gilpin, M.R.C.S., L.R.C.P. Lond., of a son.

HOWDEN.—At 24, Burdon-terrace, Newcastle-upon-Tyne, on Jan. 29th, the wife of Professor Robert Howden of a son.

SMELT.—On Jan. 26th, at Holloway-road, N., the wife of C. A. Casterton Smelt, M.B., C.M. Edin., of a daughter.

MARRIAGES.

McGEAGH—RYDER.—On Jan. 31st, at St. Mary's, Crumpsall, Manchester, by the Rev. J. Falconer, Vicar of Tunstead, Stackstead, and the Rev. R. Catterall, Rector of the parish, William McGeagh, M.D., of Liverpool, to Eliza Jane, only daughter of the late W. B. Ryder, J.P., of Gransden Hall, Hunts.

MUDIE—SOMERSET.—On Jan. 27th, at All Saints, Margaret-street, W., Arthur Mudie, L.R.C.P. Edin., of York Lodge, West Norwood, to Marianne, daughter of the late Francis Flower Somerset.

DEATHS.

CROSSLEY.—On Jan. 25th, at Maltby, William Henry Crossley, M.R.C.S., L.S.A., L.M., aged 68 years.

HULME.—On Jan. 25th, at Philbeach-gardens, South Kensington, Edward Charles Hulme, F.R.C.S., aged 78 years.

SEWELL.—On Jan. 28th, at Lintoch House, Canterbury, Charles Brodie Sewell, M.D. Lond., in the 83rd year of his age.

SUTCLIFF.—On Jan. 29th, at Torrington, N. Devon, Edward Sutcliff, M.D., in the 61st year of his age.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PROPERTY IN A PRESCRIPTION.

AN amicable dispute illustrating one side of the question that is often asked: To whom does a prescription belong? is placed before us in the following letter. Our comments are based, of course, upon the letter which has been written by the patient, but with the facts in which we presume the medical man agrees.

To the Editors of THE LANCET.

SIRS,—Will you kindly say in an early number of THE LANCET who is right under the following circumstances? A patient who has been attended for an illness for some time by a doctor in general practice expresses a wish to see a consulting physician and does so accompanied by the general practitioner (hereinafter called "the doctor"). The consultant having heard all about the case and examined the patient, says to the doctor, "What medicine have you been giving him?" The doctor tells him and the consultant then says, "Very well, he can go on with it," or words to that effect. Now, had the patient gone to the consultant alone he would have had a prescription from him, and he contends that he is entitled to ask the doctor for the one of which the consultant approved and therefore practically prescribed, as otherwise he is worse off by taking his doctor with him than if he had gone alone, and except a general opinion gets nothing for his fee. The doctor contends that the patient is not so entitled. Which is right, both in the legal and professional aspects of the case? The doctor and his patient are perfectly friendly in the matter and only want what is proper, but each entertains a strong opinion on the point. The patient goes about a good deal from place to place. The patient could, of course, at any time pay the consultant a second visit and fee unaccompanied by the doctor and so obtain the prescription he wants, but this would only put him to unnecessary trouble and expense without in any way benefiting the doctor.

I enclose my card and remain, Sirs, yours obediently,

PATIENT.

"Patient's" letter touches upon several interesting points. We do not attempt to give an opinion upon the legal aspects of the case—it is not within our scope to do so—and we cannot more than guess what would be the decisions of judges upon the question of to whom the copyright in a prescription belongs. Sophistry, we imagine, could make out an excellent claim on either side. "Patient" does not bring any good arguments to bear to support his claim. He had no right to assume that he would get a prescription from the consulting physician as the result of consulting him. What he would certainly get would be consideration of his case and recommendations as to treatment, but it was not inevitable that he should receive a prescription. Nor is his view of the value of a prescription a sound one though it is a common one. "Patient" should remember that a prescription is only given to meet the existing conditions when the sufferer comes under the physician's eye. It is not a formula to be kept in his desk so that he can get it made up at a druggist's whenever he thinks that the remedy will suit his physical ills; nor is it intended that he should recommend it to his friends for the alleviation of troubles which he or they may think resemble the troubles for which medical advice was originally given. A prescription is designed purely to meet temporary circumstances; it is to be taken for such a time as the prescriber thinks desirable and no longer without a renewal of his authority. So that "Patient" cannot maintain that he sustains any loss by not being in a position to use it for other than temporary purposes. Some medical men recognise this temporary character of their prescriptions more decidedly than others, and in writing their prescriptions indicate that after such and such a date the formula is not to be used without their written sanction, a proviso to which every good druggist would attend implicitly. "The patient goes about a good deal from place to place," says our correspondent, and this seems to imply that he will find it inconvenient to consult his medical man every time that he wants medicine; hence, probably, he wishes to have the prescription that he may drug himself as occasion arises. It is well, from a medical point of view, that he should not be in a position to do this.

Two other points in "Patient's" letter call for notice. Firstly, he feels that he has not had his money's worth because he is deprived of a chance of getting unlimited medicine. He evidently regards the medicine as the thing and not the diagnosis or the general plan of treatment. Secondly, he speaks of the situation that would have arisen if he had placed himself under a consultant physician directly, having clearly no idea of the position which the consultant physician is supposed to occupy towards the general practitioner. It is distinctly unprofessional of any consultant physician to take over the care of a general practitioner's patient, and before "Patient" could have obtained from the consultant the assistance he desired he would have had to conceal the fact that his medical man was already treating him.

"IMPROPER ADVERTISEMENT."

REFERRING to the letters which appeared under this heading in our issues of Dec. 23rd, 1899, p. 1790, and Dec. 30th, 1899, p. 1870, we desire to say that we unreservedly accept the statements in Dr. Fürth's letter of Dec. 26th, 1899, and published in our issue of Dec. 30th, 1899, and to express our regret that a letter which imputed improper advertising to Dr. Fürth should have been allowed to appear in these columns.

"THE VOMITING OF PREGNANCY."

To the Editors of THE LANCET.

SIRS,—"Obstet," in THE LANCET of Jan. 20th, 1900, p. 212, asks a question which requires a very long reply, but if he will glance at Sections 860 and 861 of the Medical Digest he will find all he needs in the two columns of remedies. A mixture that has been found efficacious in most cases is as follows: two drachms of bromide of potassium, half a drachm of liquor strychniæ, and three ounces of chloroform water; one-twelfth part to be taken in water three or four times a day.

I am, Sirs, yours faithfully,

RICHARD NEALE, M.D. Lond.

Finchley-road, Hampstead, N.W., Jan. 25th, 1900.

"THE MOTHER'S CALL."

WE have been informed that the following stirring verses which appear in the *Wellington Evening Post* are from the pen of a medical man, and that the initials stand for the name of Dr. G. E. Anson of Wellington, N.Z.:—

I.

What whisper this which ripples round the world,
And stirs the Viking pulses in our veins?
Ten thousand flags of Liberty unfurl'd!
Ten thousand dreams of battle in our brains!

CHORUS—

'Tis the Nation-mother whisp'ring 'neath the waves,
Calling for her children, calling on her braves!
O, mother who has bred us,
Protected us and led us,
We are coming, coming, coming o'er the waves!

II.

Bleeding she grips, nor counts the cost or time;
While envious nations stand around and jeer!
Shall we, the pampered darlings of her prime,
Craven, ungrateful, deem the price too dear?

CHORUS—'Tis the Nation-mother, &c., &c.

III.

The Sumac, and the Maple, and the Pine;
The Rata, and the Wattle, and the Gum;
All bow their heads together at the sign,
And chorus back:—"O, mother, we will come!"

CHORUS—'Tis the Nation-mother, &c., &c.

IV.

We reck not of the traitor's poison'd lie,
Nor sharp-tongued arrows of the fickle press;
Sure of the Right, we hear thy Mother-cry,
And give our lives to thee! We give no less!

CHORUS—

'Tis the Nation-mother whisp'ring 'neath the waves,
Calling for her children, calling on her braves!
O, mother who hast bred us,
Protected us and led us,
We are coming, coming, coming o'er the waves!

G. E. A.

"THE CHAIRMAN'S HANDBOOK."

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers recommend a small book as guide to a chairman's conduct at a meeting? I believe there is such a book called "The Chairman's Handbook."

I am, Sirs, yours faithfully,

Jan. 27th, 1900. M.D.

*** "The Chairman's Handbook," by Sir Reginald Palgrave (Sampson Low, Marston, and Co.), 2*s*.—ED. L.

"THE DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—With respect to your remarks *re* the dearth of locum-tenents I cannot think that the suggestion of "Unqualified" in THE LANCET of Jan. 20th will solve the difficulty. I am not sufficiently learned in political economy to know whether in the event of the demands exceeding the supply the locum-tenent is justified in attempting to raise his market value, though it appears to me that it is a general consequence in the commercial world, and that for much the same reason the salary of the permanent assistant has been advanced about 30 per cent. during the last 18 months. I have noticed that in the past there has been a marked tendency manifested to obtain a ocum-tenent below the usual market rates, which I take to be three guineas per week and travelling expenses. If this tendency was the result of the employment of the unqualified assistant, who, doubtless on occasion, assumed the rôle of locum-tenent, it is hardly to be wondered at if, now that the iniquity of allowing the unqualified to

compete with the qualified is abolished, the latter should try to improve his market value. As one who has been both a locum-tenent and an employer of such it appears to me that as the collier is paid on a sliding scale so might the locum-tenent be, on a basis of the supposed value of the practice as representing the amount of work he might be required to perform and the amount of money he was earning for his employer. As a locum-tenent I have enjoyed six weeks in a very pleasant country practice, with light work and delightful social surroundings and amusements. I have also enjoyed, to a lesser extent, six weeks in a very unpleasant town, visiting from 50 to 70 cases per diem and being called up three nights a week, the remuneration in each case being the same. The locum-tenent seldom knows which is to be his fate until he gets there. As an employer of locum-tenents I have felt inclined to grudge paying a locum three guineas per week for working a small and pleasant country practice when my more opulent brethren could get their much larger practices worked at the same figure. If three guineas per week is not too much to pay a locum-tenent for earning, say, £1 per diem it is surely too little for earning £3 or £4 per diem.

I am, Sirs, yours faithfully,

Jan. 23rd, 1900. QUALIFIED.

CORRECT OR FRIENDLY?

To the Editors of THE LANCET.

SIRS,—Will you oblige me with your opinion on the following: 1. I attended a patient some years ago for phthisis and have attended her at intervals since then for the same complaint. I last attended her a few months ago at her confinement and have lately heard she has died from phthisis, another medical man being then in attendance. I received no communication either from the medical man or the patient. 2. I attended a patient in her confinement and also since, as well as her child. She has lately been confined again, the aforesaid medical man being in attendance. I have received no communication either from the medical man or the patient. In neither of the cases was I actually in attendance at the time the other medical man was called in, but in Case 1 the complaint was one for which I had attended her at intervals for six years. Is this medical man's conduct (*a*) strictly correct, (*b*) friendly?

I am, Sirs, yours faithfully,

Jan. 27th, 1900. M.A. CANTAB.

*** The patient has the right to employ whatever medical man he or she pleases. But it is recognised that no medical man should take over a patient who is still under the charge of a brother practitioner. In the circumstances of the first case a communication to "M.A. Cantab." would have been friendly, but the gap of "a few months" in the attendances seems to absolve the other practitioner from a charge of "poaching." In the second case there was no onus on the superseding medical man to say anything to "M.A. Cantab.," who, however, might fairly have expected to hear from the patient.—ED. L.

QUACKS AND ABORTION.

WHILE expressing satisfaction at the destruction of the trade in quack abortifacients by our articles and by recent prosecutions, and at the disappearance of the advertisements connected with it from the newspapers which formerly contained them, we have always held the opinion that the destruction could not be expected to be complete and that the advertisers would not disappear entirely. The following, published in the issue of the paper "for week ending Jan. 27th, 1900," shows that our prediction has speedily been realised:—

OTTEY'S STRONG PILLS

Speedily cure Anæmia and all other kindred complaints; correct all distressing symptoms; and restore females to their usual health. By post only, for 14 and 33 stamps, from—THOMAS OTTEY, Chemist, 82, Hagley-road, Birmingham.

Mention *Illustrated Bits.*

We mention *Illustrated Bits* without hesitation as requested. We also mention that it was Thomas Ottey of Birmingham who offered to supply our agent with a pill that would "shift anything" in the nature of an "obstruction," while for the rest of his professions we refer our readers to THE LANCET of Dec. 17th, 1898, p. 1652, where will be found that on analysis Thomas Ottey's Strong Pills as then advertised revealed the presence of savin in appreciable quantities. We further call the attention of the editor of *Illustrated Bits* to the fact that in one issue of his paper now before us he has printed Ottey's advertisement immediately after one addressed to "the Married and those Intending to Marry," extolling the merits of a book which "treats every branch of this delicate question of large families with a moral check," while in another number we find it inserted in close proximity to an advertisement of a "Book for Ladies," which "goes thoroughly into matters relating to married women." We also mention for the benefit of the editor or proprietor of *Illustrated Bits* that Mr. Justice Darling expressed an opinion as to the liability of those publishing certain advertisements in newspapers. The advertisement as it now appears differs in many respects from the one which used to advertise Ottey's wares a few months ago, but it is possible that the persons receiving the advertisement while noting the alterations in its terms have failed to satisfy themselves that the goods sold differ also from those previously retailed to pregnant women. We have taken no steps at present to ascertain in how many papers advertisements such as those of Ottey still appear, but we note that that of "Madame St. Clair" is, or was last month, appearing, slightly modified, with one or two similar in character, in an Irish newspaper, the *Ballymoney Free Press;* and it is not improbable that it will be in outlying portions of the kingdom and by advertising in the more obscure local journals that the attempt to revive the trade of Madame Frain and her congeners will be made. At the same time we have no doubt that the proprietor of *Illustrated Bits* will see, now that it has been pointed out to him, that the advertisements of Thomas Ottey should not be inserted in his paper without full inquiry on his part as to what they may imply.

P. B.—It seems to us from our correspondent's account that the man is pretending to have regular medical qualifications. In our view the Medical Act covers such cases, but judges notoriously differ in their decisions. We recommend that the matter be brought to the notice of the Medical Defence Union or of the London and Counties Medical Protection Society.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 1st, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan. 26	30·19	W.	...	57	51	44	45	47	Overcast
,, 27	29·72	S.W.	0·04	52	47	38	37	38	Cloudy
,, 28	29·35	N.E.	0·05	53	40	34	36	36	Snowing
,, 29	29·72	N.E.	0·26	59	41	35	36	38	Cloudy
,, 30	29·66	N.E.	0·02	48	41	38	37	39	Overcast
,, 31	29·77	N.E.	0·01	49	42	38	38	39	Raining
Feb. 1	29·72	E.	...	39	36	35	35	36	Overcast

During the week marked copies of the following newspapers have been received: *Scotsman, United Service Gazette, Health, Madras Times, Birmingham Argus, Northern Daily Telegraph, Times of India, Pioneer Mail, Hampshire Observer, Evening Post (Wellington, New Zealand), Grimsby Express, Hull News, Daily Chronicle, Westminster Gazette, Sanitary Record, Brighton Gazette, Nottingham City News, Builder, Citizen, Morning Herald, Tunbridge Wells Advertiser, Bromley Chronicle, Leeds Mercury, Architect, Liverpool Daily Post, Eastern Morning News, Norfolk Weekly Standard, Sussex Daily News, Leicester Daily Post, Newcastle Daily Chronicle, East Anglian Daily Times, York Daily Herald, Manchester Guardian, Reading Mercury, City Press, Hertfordshire Mercury, Chard and Ilminster News, Local Government Chronicle, Mining Journal, Bristol Mercury, Yorkshire Post, North Cheshire Herald, Bicester Herald, Highland News, Weekly Budget, Derby Mercury, League Journal (Glasgow), Meat Trades Journal, Burnley Express, Topical Times, Surrey Advertiser, Local Government Journal, Australasian Medical Gazette, Hereford Times, Cromer Post, British Dental Journal, Chemist and Druggist, Glasgow Herald, Morning Leader, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-We

London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (10th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (5th).—OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.)—4.30 P.M. The President: **Introductory Address. Professor U. Pritchard: Antiseptics in Aural Surgery. Cases and Specimens will be shown by Dr. Milligan, Professor U. Pritchard, Dr. D. Grant, Dr. Tilley, Dr. S. Thomson, Dr. R. Lake, Mr. L. A. Lawrence, Dr. J. Horne, Mr. A. Cheatle, and Mr. E. Waggett.**

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square, W.C.).—7 P.M. **Council Meeting.** 8 P.M. **Paper:—Mr. J. G. Turner: Antral Catarrh and Suppuration. Casual Communication:—Mr. H. Lloyd Williams: A Case of Acute Spasmodic Neuralgia caused by Attrition of the Teeth.**

TUESDAY (6th).—PATHOLOGICAL SOCIETY OF LONDON (Pathological Laboratory, University College Gower-street).—8.30 P.M. Laboratory Meeting. **Papers:—Dr. Nuttall: Recent Investigations on Malaria (with microscopical demonstration).—Dr. Strangeways Pigg (for Dr. A. Greene): Experimental production of Amyloid Disease in Animals.—Dr. Myers: Hæmolysis, especially in connexion with Snake Poison.—Mr. Spencer and Dr. Risien Russell: Experiments relating to Nervous Disturbances of Respiration, of the Larynx, of Mastication, and of Deglutition.—Dr. B. Abrahams: The Cortical Changes in Acute Chorea (lantern demonstration).**

WEDNESDAY (7th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. **Specimens will be shown by Dr. A. Routh, Dr. Griffith, and others. Annual Meeting. The President (Mr. A. Doran): Annual Address.**

SOCIETY OF ARTS.—8 P.M. **Mr. E. Wilson: Housing of the Poor.**

THURSDAY (8th).—NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, W.).—8.30 P.M. **Annual General Meeting for Election of Officers. Dr. A. Waller: On the Excitability of Nervous Matter, with special reference to the Retina (Presidential Address).**

FRIDAY (9th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. **Papers:—Dr. Rolleston: A Case of Fatal Hæmopneumothorax of unexplained origin.—Mr. R. Jones and Mr. Tubby: Further Experience of Cases of Spinal Rectification.—Dr. J. J. Perkins and Mr. C. S. Wallace: A Case of Perforated Duodenal Ulcer, Operation, Recovery.**

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (5th).—LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. **Mr. C. Wookes: Examination of Nose. (Post-Graduate Course.)**

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. **Mr. M Morris: Consultation. (Skin.)**

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. **Mr. Bidwell: Minor Surgery.**

ROYAL INSTITUTION OF GREAT BRITAIN.—5 P.M. General Monthly Meeting.

TUESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. **Dr. C. T. Williams: Consultation. (Medical.)**

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30. P.M. **Mr. V. Horsley: Surgery of the Nervous System.**

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. **Prof. E. Ray Lankester: The Structure and Classification of Fishes.**

WEDNESDAY (7th).—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester square, W.C.).—4.30 P.M. **Dr. Eddowes: Burns, Scalds, and Scars. (Post-graduate Course.)**

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22 Chenies-street, W.C.).—4 P.M. **Dr. G. Hankin: Consultation. (Medical.)** 5 P.M. **Dr. StClair Thomson: Class. Demonstration IV.:—Practical Laryngology.**

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. **Dr. Fowler: The Symptoms and Treatment of Cardiac Failure in Mitral Stenosis and Mitral Regurgitation.**

THURSDAY (8th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—5 P.M. Clinical Demonstration:—**Dr. T. D. Savill: Cases Illustrating the Symptoms of Vaso-Motor Disorders and their Treatment.**

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. **Dr. Voelcker: Treatment of Whooping Cough.**

CHARING-CROSS HOSPITAL.—4 P.M. **Mr. Waterhouse: Demonstration of Surgical Cases. (Post-graduate Course.)**

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. **Mr. J. Hutchinson: Consultation. (Surgical.)**

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. **Mr. Dunn: Glaucoma.**

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. **Prof. H. H. Turner: Modern Astronomy.**

FRIDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—**Professor McCall Anderson: On the Uses of Tuberculin in the Diagnosis and Treatment of Disease.**

ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. **Prof. J. R Green: Symbiosis and Symbiotic Fermentation.**

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume were given in THE LANCET of Jan. 6th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1899 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

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